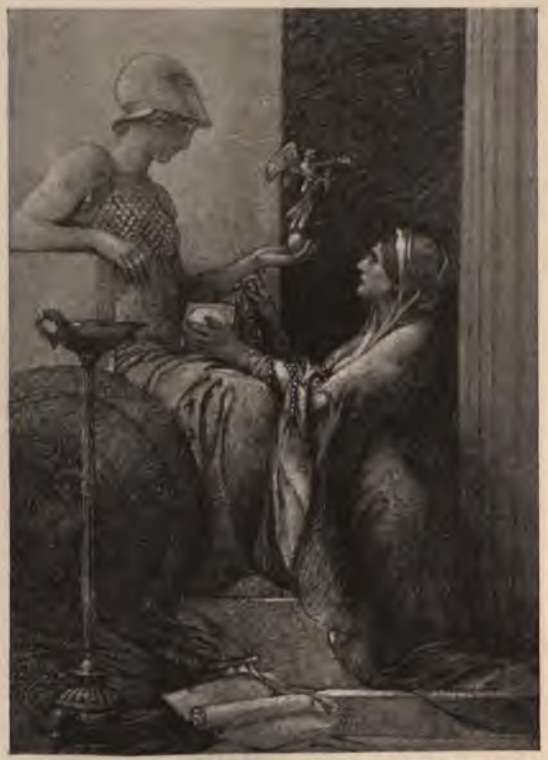
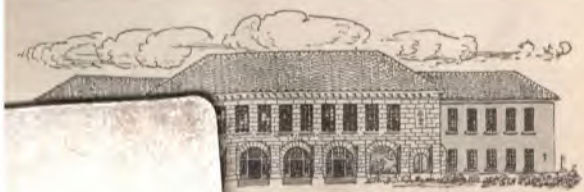
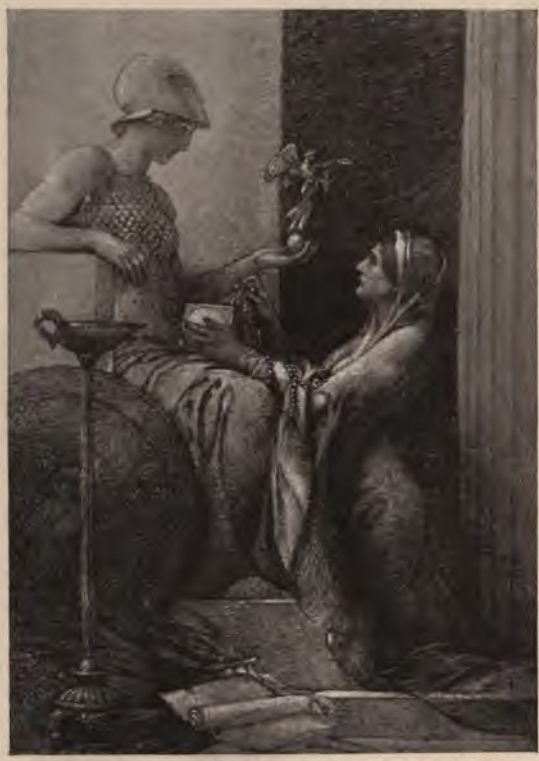
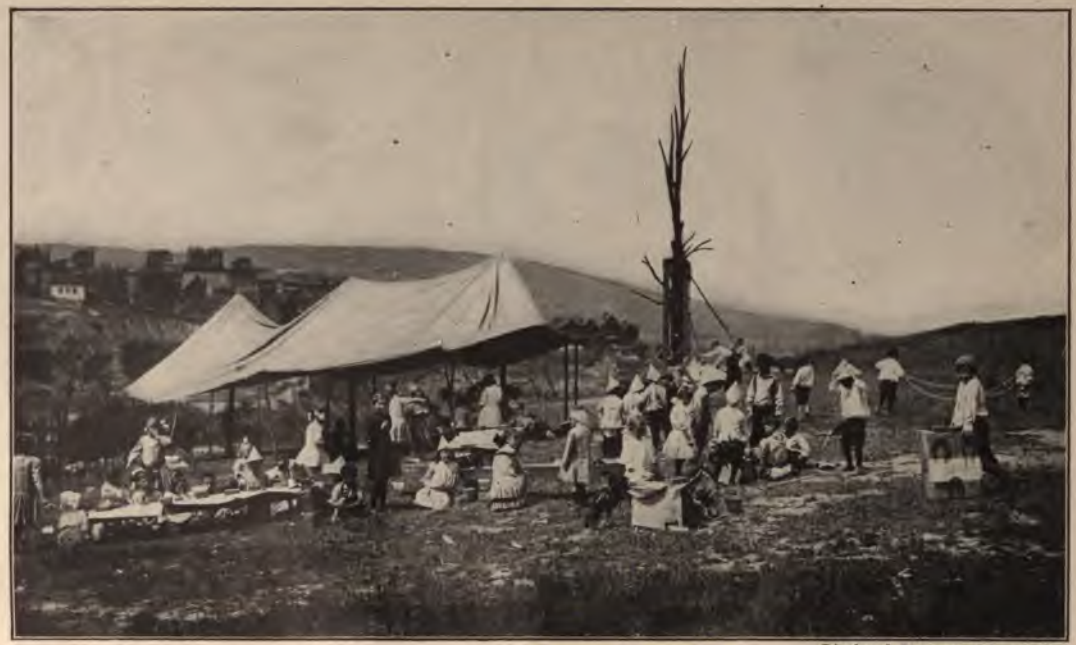






SPONTANEOUS AND SUPERVISED PLAY IN CHILDHOOD



Pittsburgh Playground Association

THE CHILD'S PLAY WORLD

SPONTANEOUS AND SUPERVISED PLAY IN CHILDHOOD

BY

ALICE CORBIN SIES
Formerly Assistant Professor of Childhood Education,
University of Pittsburgh, and Supervisor of Playgrounds
for Small Children, City of Pittsburgh

New York
THE MACMILLAN COMPANY
1922

PRINTED IN THE UNITED STATES OF AMERICA

Set up and electrotyped. Published August, 1922

TO MY MOTHER,
MY FIRST PLAYFELLOW

PREFACE

MOST books on play have been concerned with the spontaneous activities of children in fortuitous environment, or with the description of the more formal games that children play. The author has not described games nor has she discussed the informal play of children as it may be observed ordinarily in the home, schoolyard, and vacant lot, but has given a picture of children at play in a *planned environment.* If the main task of civilization is, as Wallas suggests, to produce a new environment whose stimulation of our existing dispositions shall tend toward a good life, then the chief office of education is to provide an environment whose stimulation of the predispositions of children shall tend toward a good life. This is just what the author has done. She planned an environment adapted to stimulate the play tendencies of children toward right responses. The original nature of children is conceived by the author not as antagonistic to but as favorable for the development of those qualities, physical, mental, and moral, which we desire for mankind generally. Human nature as exhibited in children has nothing that is not available for the good life, if only the sequence of conduct be started in the right direction — it has no quality we can afford entirely to lose. But it is in the wisely planned environment alone that human nature and the good life are wholly consistent.

Now education has all too commonly made this mistake — it has been concerned over-much with the adjustment of children to the existing environment.

Emphasis has been placed upon what we hope our children will become rather than upon what children at the time may be. This is contrary to the method of nature and to the actual line of progress of the race as revealed in history. Man has continually changed environment to suit his own needs, his own nature, and not his nature to suit his environment. The present trend in education toward a greater recognition of human nature as manifested in childhood may be interpreted as an attempt to do practically what the author did, namely, to create an environment that shall stimulate the predispositions of children toward a good life, in the belief that abundant life in the present is the best preparation for abundant life in later years. Success in education, not alone for individual efficiency but even more for the rapidly enlarging social conceptions of the times, depends upon our knowledge and appreciation of the predispositions of children and our skill in providing the environment adapted to stimulate to good acts. Our schools are in much need of this skill. The author has made a genuine contribution to education in clarifying the philosophy underlying the spontaneous play of children in the various fields of human endeavor and achievement and in showing how environment may be adapted to tapping the deep reservoirs of child nature, of human nature, in educational work.

GEORGE E. JOHNSON

Harvard University

ACKNOWLEDGEMENTS

My chief acknowledgements are to the children in the playgrounds of Pittsburgh and to Mr. George E. Johnson, who shared his vision of education through play with all who were associated with him during his superintendency of the Pittsburgh playgrounds. It was while endeavoring to plan a rich, free play life for the children under ten years of age in these playgrounds that it occurred to me to jot down a memorandum of their spontaneous activities. After using these records in connection with my courses in play and in childhood education at the University of Pittsburgh, I decided to publish these records in book form along with my own interpretations of the educational meaning and value of particular types of play and games. Many of the records presented were supplied by play leaders or by students in the play courses. As far as is possible, I have mentioned the names of contributors in connection with the records which they supplied. The records kept by Miss Mary T. Lutz were especially valuable. Miss Frances McGough contributed a large number of photographs after I had left active work in the field: to her I am especially indebted. To my late husband, whose interest and sacrifices facilitated the completion of this manuscript under difficult conditions and who made valuable suggestions after reading the preliminary draft of this book, I wish to pay the tribute due to loyal and discriminating coöperation.

ALICE CORBIN SIES

CONTENTS

PART I

PLAY AND WORK IN CHILDHOOD

CHAPTER I

INTRODUCTION

Sources of Material. — The plays described in this book are recorded just as they occurred in everyday life on the playground and in the home. Most of them are experiences vital to the growth and development of children. To the seeing mind and the understanding heart these plays are throbbing with human interest. They present in panoramic view a vast throng of children playing out the great experiences of life, "hunger and labor, seedtime and harvest, life and death." The children pictured in these records are not products of the imagination, nor so-called "universal types." They are real creatures, flesh and blood; moving among us; breathing vitally of life at its best and worst; laughing and crying, teasing and caressing, loving and hating, bullying and protesting.

The result of this general survey of the field of spontaneous play in childhood is not a system of play representing a bird's-eye view of all human endeavors and achievements as they are related to the home, school, church, and state, but a string of play activities touching life at every point. The arrangement is psychological rather than logical. The logical classification exists for the adult mind alone. To the child,

life is an unrolling and unraveling of tangled bits of experience; a laugh, a look, a frown, a tree to climb, a well to dig, a lesson to learn, a reward to win — all these are part and parcel of the changing and varying events which come from the constant adjustment to other people and things. House, store, soldier, carpenter, blacksmith, fireman, reindeer, chickens, hospital, restaurant, wedding and funeral are all shifting scenes in the panorama of life. The child plays one as naturally as he does another. And as he plays he discovers the meaning of things. No experience is too sordid, none too sacred to be represented in play. Eating and sleeping, living and dying are all experiences which the child plays out; testing and proving, sifting and rejecting, according to standards of his own.

The Arrangement and Classification of the Material. — In reporting this exploration into the field of spontaneous play the author has carefully avoided any comprehensive classification, either from the theoretical or the practical side. The problem of interpreting children's play is a complex and difficult one. While we can study only particular plays or games, the clearer we keep in mind the original nature of the child and the results he seeks in any particular type of play, the surer we may feel that we are keeping on the main highroad of children's interests. For this reason it seems safer to arrange in one group plays which are dominantly dramatic in significance; in another group, plays which are concerned primarily with movement; and in still another group, plays involving experimentation and manipulation of natural

forces and materials than to attempt an elaborate classification of plays and games. We thus deal with large typical experiences indicating general interests and avoid separate classifications of specialized interests.

The Aim of This Study.—The aim of this excursion into the field of spontaneous play and work is to be concrete and specific in the interpretation of both. Work and play when considered theoretically have been the subjects of much controversy among biologists, anthropologists, educators, and artists, who have searched for a special cause for play as opposed to work. In the popular mind we find play rather in disrepute, because associated either with sugar-coated methods of pedagogy or with amusement. On the other hand we find work as popularly misconceived; it is often confused with labor, which is economically valuable, and perhaps intrinsically distasteful. In order to clear up some of the popular misconceptions regarding work and play, as well as to approach the study scientifically, the author proposes to study play and work as *ways of acting, modes of living*, differentiating one from the other through an examination of the conditions, social and organic, which change action from one form of expression into another. There seems to be a real need to approach play in a more nearly exact and measurable way. This method involves, of necessity, a study of the origin of play and of work in the original tendencies of man, and takes into account the effects of the psychological condition of children, as well as their individual variations along the lines of hereditary

instincts and capacities. It also involves a recognition of the social factors in the situations studied.

The Path of Study Leads Away from the Idea of Play as an Instinct. — Whenever we embark on a study of individual plays in concrete social situations we realize we must depart from the time-worn custom of considering play as a *single instinct.* When play was so regarded, each type of play studied was viewed as so much red tape of heredity to be unraveled and disposed of before the real preparation for life could be undertaken. The following method of analysis reveals beyond the shadow of a doubt that play and work are made up of the serious use of a large variety of instincts and capacities, and are not due to the exercise of single-track instincts like hunting and fighting

An Illustration of the Author's Method of Analyzing Plays. — As an illustration of the complexity of the problem of analyzing children's play, the writer presents a typical analysis. This single example of the method of procedure ought to show the difficulties we meet in studying play. Two seven-year-old boys are playing policeman. They quarrel between themselves as to which shall be the traffic officer and finally agree to take turns. One child stands on the crossing of a quiet street, raises a warning hand to a swift moving vehicle, signals some school children not to cross the street, assists a small child to collect the potatoes he has dropped from a bag, resists with blows an attempt of the other policeman to take his turn before the time agreed upon, leaves his post to chase a stray cat, then forgets all about his duties to run after a boy on a velocipede, hoping that he may secure

from him a much coveted ride. In this apparently simple dramatic play we see many tendencies and instincts manifested. There is the tendency to dramatize striking events; there is spontaneous kindliness toward the weak and helpless; there is the fighting instinct connected with self-interest; the arousal of a specific hunting response; and an example of the precedence of the claim of the new and novel.

Not all of the records presented show as complex an array of tendencies, but few are as simple to analyze as the old-time method of approach would indicate. Many of the records collected in Pittsburgh reveal great limitations of environment, physical and social. Some of the children were literally starved for real experiences out of which to construct plays and games worthy of civilized society. While the enlarging of the content of play is one of the great advantages of play leadership in organized play centers, yet this can not be accomplished in a day or a year.

The old-time method of injecting into spontaneous play an entirely new content through the use of imitation is a serious menace to spontaneous, sincere expression. However, in playground centers so organized that children play in groups according to psychological age, as in the Pittsburgh playgrounds, it is easier to work toward that goal.

Limitations of This Study. — It would have been interesting to the author to trace the development of the play activities presented in this book into the field of subject matter in the elementary school curriculum. However, so many objectives enter into the making of curricula that are not necessarily considered in a

psychological analysis of spontaneous and supervised play, that it is hardly practicable to combine the two problems in one book.

How to Use This Book as a Textbook. — For kindergartners and primary teachers who wish to use this book as a text in normal schools and colleges, the author presents in the appendix at the end of the book a list of books for collateral reading and exercises related to the problems and principles stated in each chapter.

CHAPTER II

Play and Work: An Interpretation

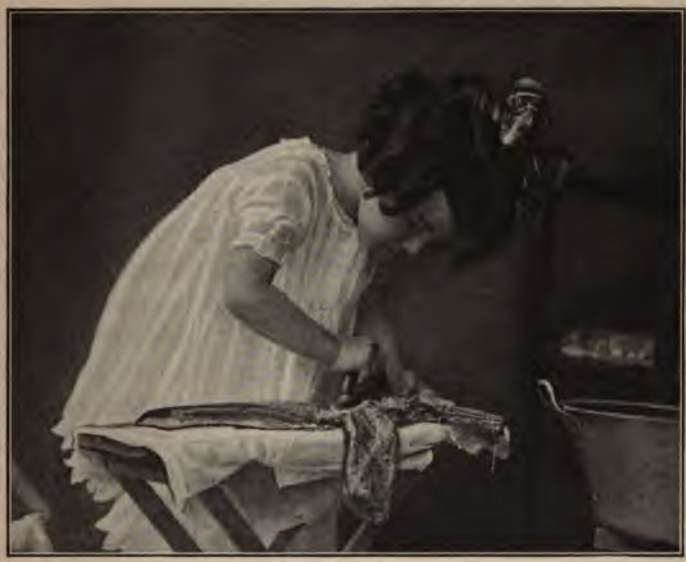
Play and Work have the Same Origin. — In attempting to discriminate between play and work we may be certain of one thing: when the child plays and when he works he relies upon the same original tendencies, the inherited instincts and capacities to initiate his efforts, to start things going. A few examples from such original starting points as food getting, teasing, fighting, ownership, collecting, motherly behavior, rivalry, imitation, desire for approval or display, gregariousness, and the like, will perhaps serve to make clear how close in origin are work and play. For example, let an adult take some children to a wood for a happy playtime. Watch the children run hither and thither collecting flowers, leaves, and nuts. Notice their happy rivalry as they vie for advantage in seeking their treasures; see their motherly behavior toward the little ones in the group; watch the playful fighting and the various appeals for adult approval. Let us suppose the little group of children becomes lost from its adult protectors, and that night sets in. With the pangs of hunger comes the struggle among members of the group for the remainder of the lunch. Serious fighting takes the place of the former playful combat and an unpleasant rivalry of ideas regarding the best thing to do succeeds the former pleasantries in conversation.

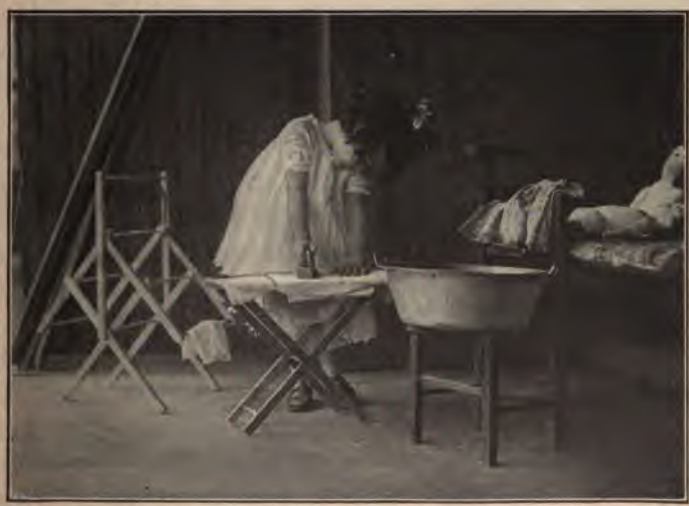
In both situations the mainsprings of action are the same; in one situation, however, adult protection and

a favorable environment permit a happy, casual, almost accidental use of the instincts of food getting, fighting, teasing, ownership, collecting, motherly behavior, and the like; in the second situation, fear, hunger, cold, and dark stimulate a serious, carefully planned use of the same instinctive tendencies.

Play and Work are Distinguished by the Conditions Attending Them. — Play and work, then, having the same origin are distinguishable by the conditions which force changes in actions. In both situations the children fight, tease, and manifest rivalry, ownership, motherly behavior, and the like. In one case reflection upon an end, the necessity to find protection, food, warmth, and light, checks spontaneous activity and leads to a rearrangement of experience to get desired results, in fact forces the children to desist from a happy circumstantial, casual set of actions and follow a course which prudence, fear, and apprehension render necessary. The distinction is between a set of actions free, spontaneous, and intrinsically satisfying on the one hand, and a set of actions forced, planned, and necessary on the other. There was, it is true, thought upon means and ends in the happy playtime; but the interest in the means and ends involved in the play was sufficient to keep the activity going by its own momentum. When dark, hunger, and cold appeared, reflection had to proceed along lines dictated by results, not by interest in the *means* of accomplishing the results.

Examples. — A simpler situation may serve to clarify the main distinctions between work and play. A little child is playing on the floor with his blocks.





PLAY AND WORK NOT DISTINGUISHED BY EXTERNAL RESULTS

He builds a boat and pushes it about on the floor saying, "Chu, Chu." Suddenly it occurs to him that his boat should have a whistle. He looks among his blocks for one of suitable shape, and places it toward the front of his boat. But at the first movement the whistle topples over. Now the little child angrily pushes the blocks apart, thinking he is tired of boats. But somehow an image of a successful boat persists in his mind. Again he builds up the boat, this time placing the whistle toward the rear. Again the boat topples over. The boy sits still awhile contemplating the wrecked boat. Something urges him on. He patiently rebuilds the blocks, fastening the whistle in the middle of the boat by using two blocks to support it at each side. And behold, the boat proceeds smoothly on its course. The boy has mastered a necessary adjustment between work and play. He has learned to plan how to reach a certain end, even where the means devised are not intrinsically pleasant and satisfying.

It would be folly, however, to conclude that whenever a break occurs in a smooth-running, spontaneous activity the activity as a whole is work. With little children this might be true if the break were not happily and quickly bridged over. The ideas of little children naturally flow immediately into action. In building with blocks, for example, they are satisfied to make an oblong block serve for a whistle, a man, a track, or a bed, so long as the train of thought moves on unchecked. Older children check up their own play, imposing longer breaks in order to make their results approximate more nearly the realities of things.

A boy of ten years, for example, experiments perhaps an hour in order to construct an adequate whistle for a toy boat. He has some regard for the physical properties of things — his boat must be of seasoned lumber; his whistle must be cylindrical; his smoke stacks must be proportioned to cabin and deck — in fact, all the parts of the boat must be assembled to approximate the proportions of real boats. In attaining this result he carefully considers means and ends. He may search for an hour to find a piece of seasoned lumber, make a journey to a factory to get a piece of wood suitable for a boat, or whittle patiently for an hour to shape the prow or stern of the boat in lifelike proportions. In other words, he may work or even perform drudgery to attain a play purpose. In so far, however, as the activity of boat making as a whole is enjoyed for its own sake, and is adapted to the boy's powers and stage of development, even though it is frequently interrupted by reflection on the means and ends involved, it is or ought to be considered a play activity.

Other examples may make more clear the fact that the attitude used in performing an activity determines some of the distinguishing factors between work and play.

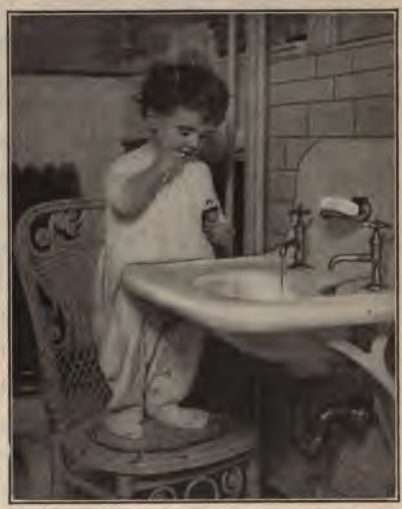
The Manner or Attitude in which an Activity is Performed is one Means of Determining Whether it is Work or Play. — A boy left alone with his new canoe experiments joyfully in adapting his strength and skill to the problem of moving his boat in the water. If he is given certain directions which he must follow explicitly, his activity becomes work because

he can no longer yield himself to the accidental and casual discovery of ways and means of moving the canoe; he must subordinate experimentation to rules which necessitate a fixed series of muscular movements.

One more example will perhaps suffice to show that work and play differ not so much in the external results reached as in the manner of gaining the results. Some little children in a playroom were making a doll's bed. They had at their disposal a complete set of bed clothes which they were adjusting over a sick doll. Their movements were free and spontaneous, prompted by the interest in caring for the doll. Presently a teacher appeared. She expressed surprise that the bed was so poorly made, forthwith removed the sick doll from the bed, and instructed the children how to make a bed properly. The joy died out of the children's faces; their hands did quick service, their minds grasped the principles of bedmaking, but the results partook of the nature of work. When the teacher passed on, taking with her a *sense of duty well done*, the children began again to play. "You poor little thing!" said one child, hugging her doll close to her, "your back must ache from lying on a bed without a pad!" Straightway she whisked the bed clothes off again and put them on the bed exactly as the teacher had done, with this exception: her mind was not bent on a successive *order* of acts connected with bedmaking, but on the purpose of making her doll comfortable and happy. The results partook of the nature of play, because the child's attitude was free and experimental, since the series of events

connected with bedmaking was subordinated to the child's happy solicitude and care for her doll.

Likewise in adult life, so long as any series of events connected with a felt need are moving on progressively and happily, bringing immediate satisfaction in the performance, we may say the activity as a whole is play. But where the series of events is constantly interrupted, and has to be checked up by a set demand for a result not immediately satisfying in itself, but leading to some *end* which *will* be satisfying later on, we say the activity is preëminently work. We say that a philosopher plays with ideas, an artist with pigment and color, a child with blocks, sand, and clay, not because the experimentations of each are entirely playful but because in each case the activity as a whole moves joyfully forward along the line of preference, obstacles and checks being met cheerfully and constructively.



A Task for an Adult Is Play to a Child

When Necessity of Better Adaptation to Life Brings Breaks in a Smoothly Running Activity, Work is Involved to Bridge the Difficulty. — Life abounds in illustrations of this psychological difference

between work and play. Take the aforementioned philosopher as another example. Let us suppose he has played his ideas into a certain system of thought. With his whole being he delights to ponder over subtleties in opinion. He builds up concepts of relativity in thought values and he loves the thought-product built up in his mind. A war looms on the horizon; new values emerge, bringing the necessity of new relationships among ideas. His sense of the fitness of things is shocked. His thought building halts and proceeds laboriously; his attention is no longer spontaneous and joyous, but labored and derived. Slowly he rearranges the contents of his mind in the light of pressure from without. He no longer plays with thought values; he works with them, even performs mental drudgery to bridge over the chasms of spiritual and economic necessity.

A last example of the difference in work and play as attributable to differences in psychological attitude may be taken from childhood. A little child likes to throw. When out of doors he picks up pebbles and stones, papers, pieces of wood or metal and thows them about as whim and caprice suggest. His mother appears and demands that he throw all these loose materials into a refuse heap. At once the boy's interest wanes, his movements lose their pristine vigor; his throwing becomes aimless. And why? Because there is no chance to experiment, to perform a muscular act and get variations in result. But suppose a wise educator appears upon the scene. She demands exactly what the mother does, that these different materials be thrown upon the refuse heap,

but with this difference: she suggests that the child watch carefully to see which he can throw faster, wood, metal, paper, or stones. The boy's attention becomes alert, his muscular movements vigorous, his activity assumes the likeness of play. Why? Because he can create through throwing. He can be a cause, experiment, watch results, and gloat over achievements. And now the work is completed and the refuse is set on fire. Again the boy and the educator enter into the realm of play. They watch the burning fragments of material; they poke about with a stick to discriminate between ashes made by paper and by wood; they marvel at the resistance stone makes to fire; they watch the melting metal. They are scientists playing with physical laws and forces. They might have become mere toilers, collecting a pile of refuse to be relegated to the dump heap.

Variation in Capacities and Habits Makes the Same Act Play for One Person and Work for Another.— In considering play, we come face to face with the problem of individual preferences due to differences in inherited capacities. It is this difference in original nature which makes it play for one child with an artistic temperament to experiment continually with color, pigment, and form, and converts another child's experimentation along this line into work. If you place a group of children in a playroom and allow them free access to a large number of materials, one child will sometimes seek the same material again and again. In observing children in a certain playroom, the writer noticed that one little child returned day

after day to experimentation with color and form. She built tiles into rugs and carpets; she painted with an abundance of color; she strung colored beads in a variety of combinations of color and form; she used colored papers and cloth skillfully and artistically. Another child with a strong bent toward mathematics revealed the tendency in the pre-kindergarten period. He used blocks with due regard for mathematical proportions. It was play when he studied out the proportions of a house and subjected the blocks to tests and formulæ of his own choosing; just as the little girl was playing when she chose colors for a carpet design. If the situation were reversed we should see the little girl work at building a house from a mathematical formula and the boy work to attain certain color combinations. We see, then, that individual differences in inherited abilities, or lack of abilities, account for some of the distinctions in play and work in the case of individual children.

Differences in Physiological Condition are Attended by Changes in the Attitude of Work and Play. — Physiological condition or variation in readiness to act in certain ways at certain times, has to be considered in discriminating between work and play. The law of readiness accounts for many of the differences between them. A little child plays busily and happily at his blocks; suddenly his brain becomes fatigued and thought ceases to flow readily into action. The blocks at once become distasteful to him. With an impetuous gesture he pushes them away and runs to the swing or climbing rope. Here he assumes new postures, stretches himself, uses a

different set of muscles. After a time his interest in building reasserts itself. To compel him to continue at the building when brain tracts are not rested and ready to serve is to induce fatigue and force him into work or drudgery.

An adult with literary talents sometimes sits down to creative work attuned in body and mind to the happy art of pouring forth his thoughts into channels of literary production. Again, when he seats himself at his desk, his brain seems set along other lines. With great difficulty he forces his attention to the task at hand. He may be able to overcome the lack of facility by sheer will power; or the conditions of fatigue may overcome him, and he may deem it wiser to set aside the work until he can command the desire and control the execution more readily.

Types of Play are Closely Related to Structural Changes in the Body. — Writers advocating the biological theory of play have made a valuable contribution in that they have pointed out the close correlation between somatic growth and the changing types of play. One of the exponents of this theory of play says: "Is it not significant that whatever the type of play may be, it just keeps pace with the type of somatic growth? And does not the impulse to exercise these growing parts furnish all the explanation that is needed for the existence of the play activity?"[1] On the whole the attempt to account for types of play through "biological necessity" has led to the sanest effort yet made among investigators of

[1] L. E. Appleton: *A Comparative Study of the Play Activities of Adult Savages and Civilized Children*, p. 78.

play. The biological theory of play accounts for many of the common elements in the play of children the world over and shows the relation of such big types of play as running games, fighting plays, and constructive activities to the order of development of the nervous system.

This theory of play has its implications in a consideration of the relation of play to work. Work in childhood should have almost as close a correlation with somatic changes as does play. That the work of children does not always answer the purpose of growth is a sad commentary upon society. When adults impose upon children tasks which are meaningless, and which do not function in the child's needs, or worse yet, tasks the performance of which violates the nature of the doer, fatigue results from the conflict between desire and necessity. Children tire in play, of course, but only after the vital energy has spent itself and brought a train of beneficial accompaniments.

When any given piece of work is as closely related to its corresponding period of growth as is spontaneous play; when, in fact, because of the close relation of the work problems to the individual's inherited powers and capacities, the transition of play into work is accomplished almost unconsciously, then and then only have we made work a method of social life which brings not only efficiency but a full rich life in its train.

The Aims of a Desirable Schedule of Play and Work. — Yet even where play and work are so closely related that both spring from the demands of growth, and play passes insensibly into work, we still have the

problem before us to see that both play and work in childhood are of the kinds that function in the social life and occupations of a people. It is of a tremendous advantage to enable children through early play and work habits to participate in the really productive work of the community. The individual has to acquire social efficiency, and if he accomplishes part of this adjustment in the early activities of life he has become initiated into society at a tremendously low cost of effort, and has done so while engaging in activities which enlist his own instincts, emotions, and imagination. The foundation of social efficiency is laid in the early activities of society. It is the part of education to lay this foundation so firmly that even the stress and strain of an unbalanced industrial world may not entirely warp the original purpose of work, and leave the individual in doubt as to the value of life and effort.

Present Economic Conditions Make the Adjustment of Work, Play, and Labor a Difficult One. — But society is not at present so organized that each individual can perform the bit of work related to his powers and capacities. The specialization of industry, so organized that industrial processes are broken up into bits, often makes it necessary that each worker perform an isolated piece of work in order to bring about certain combined results. And so the product of each individual's effort does not act as a stimulus for something new and better, but is used as a medium of exchange by which he buys desired things. So we have the labor problem of the eight hour day and the problem of recreation; for toilers experience

an exhaustion of used powers, and seek recuperation through calling into play the vast sources of unused powers, a tremendously wasteful system, and one which demands a national campaign for an enlightened social conscience with accompanying social and economic reforms.

The Place of Adult Occupations in Children's Play. — Adult occupations naturally play a large rôle in a repertoire of spontaneous play. This apprenticeship in the world's work begins at home. Under the tutelage of the mother and father, children learn to play at bedmaking, dishwashing, and carpentering. When they go to school they continue to participate in the industrial and economic work of society, for the modern school has taken on the various processes of world work under the guise of industrial training, gardening, and household arts. The activities appeal to the deep-seated instincts and capacities involved in both play and work. According to the movement and direction of the activities involved they become play or work. The proper use of these adult activities in an educational program is the big problem that confronts our modern schools. It involves the necessity of acquiring real skill, not by routine or dictation, but through reflection and experimentation. In other words, these adult occupations must be performed in the play attitude, yet involve work. Children must not be content with an easy, smooth-running way of doing things. They must accustom themselves to methods of scientific inquiry which, if need be, lead them far afield from momentary pleasure. In this way they acquire a

scientific method and amass facts of practical importance. They become so identified with the piece of work in which they are engaged that their thoughts and imaginations play fruitfully with the problem. This whole-hearted, spontaneous interest in a piece of work is a means of rich living in types of experience which the race has found most valuable. It is a different thing from the blind participation in cultural subjects which came from the old-time bookish study.

The pith and kernel of the play problem lies right here. It is to help children to control their actions more and more by intelligent reflection on a series of means leading to a desired end. It is to make play pass insensibly into work in order that action may not be at the mercy of caprice but may be the result of intelligent foresight.

Conclusion. — In conclusion, then, we may say that play and work differ not in origin nor result, but in the movement of the activity itself. When the activity as a whole is smooth-running and is not interrupted by breaks essential for progress, we have an activity that is essentially playful. On the other hand when the activity as a whole is frequently impeded by checks representing problems to be bridged over we have an activity that is essentially work. Both play and work have the same origin in deep-seated instincts and capacities; each of them may or may not satisfy some organic need, according to the extent to which they utilize nerve tracks ripe for action or violate the nature of the doer. Each may or may not satisfy a felt social need according to whether the activity functions in the life of the individual or is

associated with results, imposed from without, which have no place in growth. Most situations which are legitimately called play in childhood are in reality highly complex social situations resulting in a combination of work and play. The problem is to keep the play attitude dominant and to increase the work element progressively with the age and development of the individual.

PART II

DRAMATIC PLAYS IN CHILDHOOD

CHAPTER III

Education through Dramatic Plays

What Do We Mean by Dramatic Play?—Much has been said and written of the so-called "dramatic instinct." Often dramatic play has been characterized as the outpouring of this instinct. Yet now through the findings of experimental psychology we have come to regard dramatic play in larger perspective. It is no longer thought of as the expression of a single instinct, but rather as the outgrowth of several tendencies. It is a result of the tendency toward general physical activity and of the law of habit, in which constructive images which have once led to action tend to do so again. In childhood, both these tendencies are stronger than among adults. Children naturally think in terms of action. They have a larger number of concrete mental images than adults. It takes years to build up the meanings, feelings of relationship, and judgments which gradually take the place of the rich imagery of childhood. What more natural than to visualize characters and events concretely in dramatic play? What more artificial than to reflect abstractly upon the meanings and significance of these characters and events?

With this brief psychological background let us proceed to examine the dramatic plays of children concretely and to discuss their educational significance.

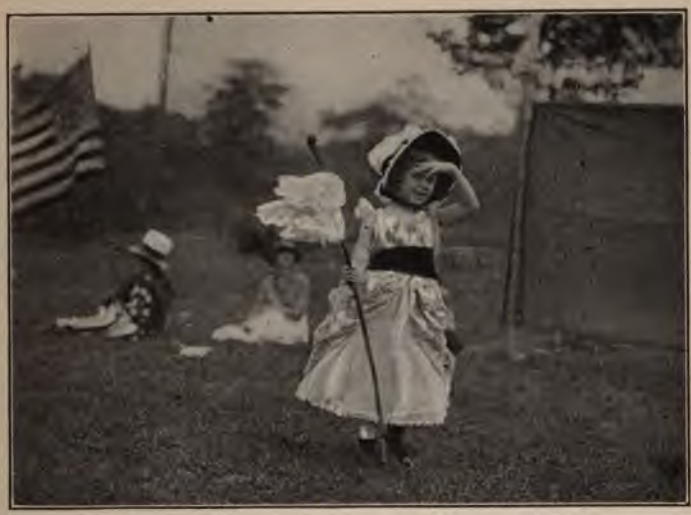
The Infant's First Dramatizations. — The infant early imitates in his own way the events which impress

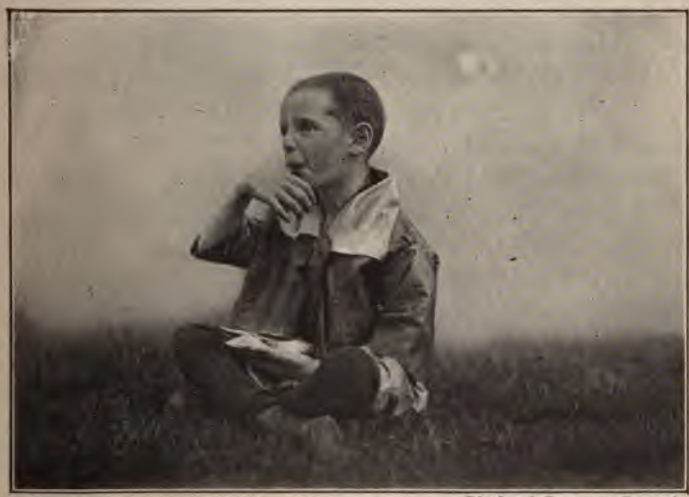
themselves vividly upon him. "Before R was fourteen months old I watched with interest the pleased expression on his face as he sat by the fire warming his clothes. Somehow warming clothes by himself was a more pleasurable experience than seeing me warm clothes: the act was motor as well as sensory, tactual as well as visual. Oftentimes he would scuttle over the floor, a dust cloth in his hand, touching chairs in imitation of dusting, or he would seize a brush and scrub the carpet vigorously as he had seen the kitchen floor scrubbed. Holding a newspaper as an adult does when reading was another of his favorite plays."[1] Before a child is three years old a good part of his waking hours is given to imitative dramatic plays. Mr. George E. Freeland watched a baby two and a half years old an entire day and discovered fifty-four dramatizations.[2]

Growth in the Mental Content of Early Dramatization. — "Why," we ask, "does the child perform such acts? Is he merely copying what goes on around him by a mechanical reproduction of the striking features of adult acts, or is he getting inside the act mentally and thus discovering its meaning?" As adults we can only interpret the meaning of these childish acts by studying the results in the child. It is obvious that such activities mean something to the child because of his persistence in them and the accompanying signs of pleasure. It is also possible to observe changes in his actions due to his gaining new meanings

[1] From the author's unpublished records.

[2] American Institute of Child Life: *The Dramatic Instinct in Children*, Monograph 352, 1914.





Pittsburgh Bureau of Recreation

CHILDREN THINK AS THEY ACT

by reproducing the acts of others. That is, if he persists in warming clothes, scrubbing floors, and dusting, there is a change and usually improvement in his representation due to the laws of exercise and effect. While to the adult the child may seem to be merely copying, he has in fact attained his result by attention, experimentation, and observation of results. Many educators have believed that such acts as the aforementioned are acquired as a result of the instinct of imitation. In speaking of imitation, Thorndike says: "I can find no evidence that any such tendency is original in man. As will be stated later, certain particular sorts of behavior do originally provoke in the spectator behavior that resembles them, but, so far as I can see, behavior in general does not."[1] And again, "The direct potency of behavior in creating something like it in another human being's behavior is not discoverable in any series of experiments in which the effects of the laws of exercise and effect are precluded or allowed for."[1]

What the Child Dramatizes and Why. — What the child dramatizes is not due to circumstances alone. He has different interests, physical and mental, at different ages, and selects the part to play which exercises the instincts and capacities already in action. He sees scrubbing all his life, but he first reproduces it, not only because the pattern is constantly acted before him, but also because he has an innate tendency to make many minor bodily movements and scrubbing provides a satisfactory form of exercise.

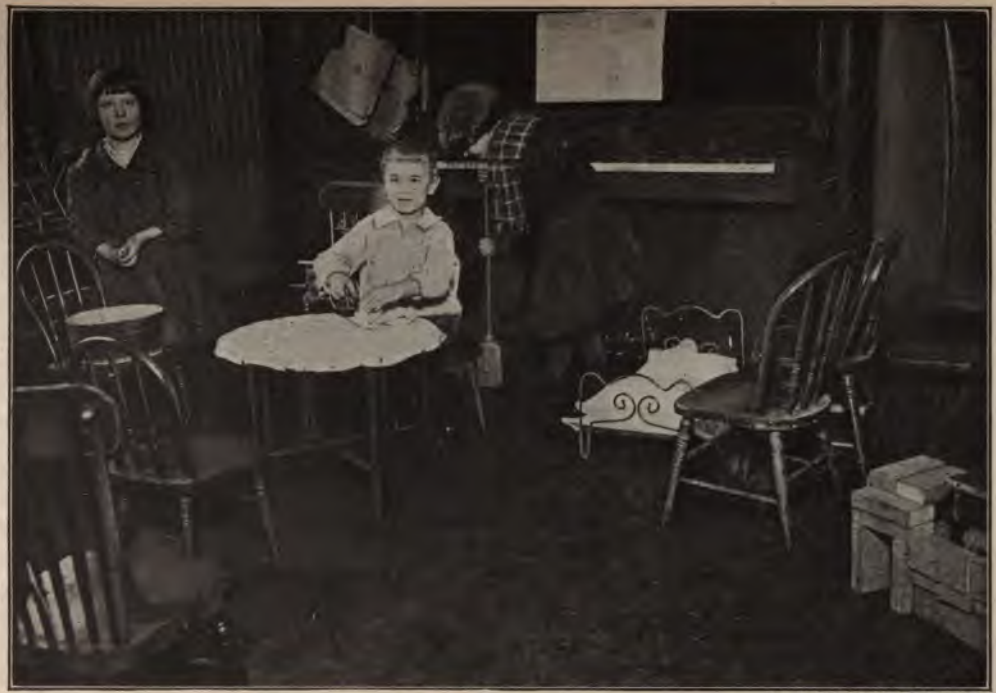
[1] E. L. Thorndike: "The Original Nature of Man," *Educational Psychology*, Vol. I, pp. 110, 111.

He sees policemen and soldiers all his life, but he dramatizes their activities at a time in life when he admires physical prowess and when his physical growth makes it possible for him to simulate the external appearance of bravery. Back of dramatic plays can be seen some tissue hunger of the developing mind and body, some physical craving, some mental need reaching out for expression. This gives the child's reason for selecting particular types of play. To some extent, however, the content of dramatic plays is conditioned from without, patterned, as it were, from the activities most frequently seen and known. We have only to observe children closely in their play to find out what their fathers do, how their mothers conduct their homes, and the topics of daily conversation among members of the family and neighbors. If we are keen observers, it is possible to tell what kind of discipline the home affords; tyrannical behavior is as sure to be copied as habits of submission, while the coarse actions and rough language of parents or servants are as likely to become ingrained in the habits of children as the gentle manners and refined speech of cultured parents. Any striking behavior is likely to be copied in play; in fact this is how children grow to understand the meaning and significance of manners and morals.

The Commonplace Activities of Life are a Source of Valuable Dramatic Plays. — Some kindergartners object to children's realistic dramatization of such utilitarian occupations as washing, ironing, scrubbing, and street cleaning. They prefer to have play centered in symbolic material, and so have invented games

in which the child is supposed to be interested not so much in the overt activity as he plays carpenter, blacksmith, or knight, but in a symbolic meaning read into these plays by Froebel. In some mystic way children are supposed to imbibe a sense of the economic relationship the family bears to church and state. Many regard this symbolism beyond the ken of childish minds. There was at one time a difference of opinion among kindergarten teachers as to whether a child's play should deal with things within his experience or types and symbols which may be outside the realm of his experience. Should he dramatize the policeman and the fireman as brave persons, or plumed knights on horseback as a *type* of chivalry and bravery? Again, experimental psychology has clearly established the fact that symbols may be safely used in childhood *only after direct personal experience with the thing symbolized*, and then only as an adjunct to experience.

To a large number of kindergartners it has always seemed that the healthy imagination deals with real things as they appear to the eye. To the child, the common household activities are not mere bits of work necessary for the maintenance of the home; they represent interesting ways of manipulating physical objects and forces, and demand judgment and imagination in using them. Pumping water, sweeping the floor and washing dishes are activities tedious to most grown-ups because such work fails to satisfy any inner need. Nerve tracts not ready to act are used; attention is forced, and fatigue comes rapidly. How different with a child whose hands and arms crave



Pittsburgh Bureau of Recreation

COMMONPLACE HOUSEHOLD ACTIVITIES ARE PLAYFULLY PERFORMED

such exercise! The nerve tracts are ready to act; much energy is used with little fatigue; and the work *thoroughly satisfies* the nature of the worker. Such activities command the interest of children, who thus imitate the actions of grown-ups with pleasure and profit to themselves. To sum up, there seems to be no psychological foundation for this discrimination against so-called utilitarian play. It has been clearly demonstrated that the roots of play and work are one and the same, and that most of the original tendencies leading to play initiate work as well.

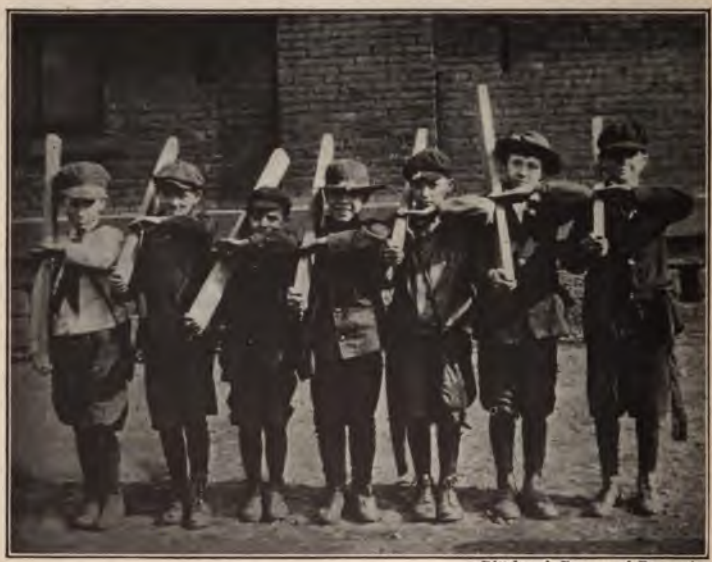
A List of Spontaneous Dramatic Plays Gathered from Playgrounds. — The records of dramatic plays in some thirty playgrounds of Pittsburgh show no work too common, no experience too sordid to be dramatized. Playing house with dolls, having company for dinner, dramatizing the rôles of various members of the family; keeping hotels, restaurants, banks, stores of all kinds; playing church and school; cowboy, Indian, Robinson Crusoe; dramatizing such historic events as the Boston Tea Party and the events of the French and Indian Wars; playing hospital and funeral; taking on the work of the fireman, cobbler, blacksmith, dressmaker, street-cleaner, liveryman, etc.; playing telephone, train, fishing, diving, circus, menagerie; imitating the life and movements of butterflies, grasshoppers, rabbits, goats, reindeer, birds, and chickens: all these, and more, the records show to be subjects for spontaneous dramatic play.

Breadth of a Child's Interests as Seen in Dramatic Play. — This breadth of children's interests in dramatic plays and games indicates more than a remark-

able catholicity of taste. With lack of power to concentrate for long periods and a short span of attention this would be a dull world for the child, could he not overcome such limitations by breadth in play interests. Parents often complain that the kindergarten interferes with concentration by supplying so many and varied types of activity. They aim to counteract this training by supplying their own children with only a few playthings and toys. In this way parents limit children's development. It is impossible for children of kindergarten age to give continuous attention to any one thing. They need a breadth of play interests. Let children of kindergarten age flit from one play to another. The poverty of mental content accounts for the fact that no one object holds the center of attention for a long time. As soon as experience adds new meaning to objects, and the span of attention increases with age, the power to concentrate will increase naturally. We forget the characteristics of childhood when we endeavor to limit the field of play; we need to remind ourselves that adults necessarily narrow their interests to those necessary for a livelihood and that childhood is the time to give a broad foundation through play.

All through childhood there is a strong tendency to imitate the striking features of the environment. Anything unusual or picturesque appeals to children and often leads to dramatizing the person, event, or force which has made a new or unusual impression. Other things being equal, children select people and activities that are novel or that permit the display of force, movement, and striking acts. Up to the sixth

year firemen, policemen, Santa Claus, fairies, brownies, carpenters, blacksmiths, and the like are favorite copies because the things these characters do, the feats they perform, give room for plenty of physical



Pittsburgh Bureau of Recreation

CHILDREN LIKE TO IMITATE STRONG AND VIGOROUS TYPES OF CHARACTER

exercise, permit manipulation of objects, and create in the young imitators a feeling of importance.

The Tendency to Imitate Striking Activities and Active or Picturesque Types of Personality. — After the seventh year there is a growing tendency to imitate strong and vigorous types. Cowboys, Indians, soldiers are played over and over again because these characters stimulate admiration at an

age when the performance of physical feats seems grand and heroic to children. The minister, teacher, scholar, or clerk may be as worthy of admiration as the more physically strenuous types, but at an age where adventure and physical prowess appeal to the wholesome activities of children's growing bodies such characters are seldom copied in play. After the tenth year there is seen a tendency to reach out beyond the environment for subjects and events to dramatize; especially is this true if familiarity with history and good literature has been gained.

Illusion in Dramatic Play. — There is a tendency to describe imaginative dramatic play as "make-believe." Konrad Lange has shown that with the higher animals especially there is the element of illusion or conscious self-deception. Groos says that the capacity for illusion is the most interesting feature of imitative dramatic play, and adds: "On the other hand, the waking consciousness seems to be unshaken through it all."[1] How true this is, we see in watching children make-believe. Playing that grass is salad, a clothespin a doll, and sand sugar, does not indicate that the child is making-believe except from the adult viewpoint. He does not eat the grass or taste the sand. His imagination gives him the ability to substitute the qualities lacking in the immediate objects. Again, when a child plays bear, tiger, and reindeer, these animals are vividly present in imagination. His mind overcomes limitations of time and space; the bear stalks about, growls, and pursues food; still more, the child identifies himself

[1] K. Groos: *The Play of Man*, p. 307.

with the bear by himself representing these bear-like characteristics. The adult who does not see the importance of this power of the mind to translate things not present to sense into realities loses sight of the most central thing in the intellectual life of the child.

The Play Attitude in Early Childhood One of Freedom. — An attitude of mental freedom characterizes the dramatic play of children from four to eight years of age. A child does not demand that a thing really resemble in physical appearance what he pretends it represents; that is, there is no identity between the physical traits of an object and the mental images associated with it. A broomstick becomes a horse not because it suggests the form and outline of a horse, but because it lends itself to locomotion easily and *use* is more essential in play than appearance. Likewise, as occasion demands, a board becomes a sled, a boat, a train, or a slide, and to all purposes becomes one as easily as another. The essential thing is not the board, but the ideas clustered about the use of it, the quality of the mental images which call it into life as the object it represents. The following quotation from Stevenson illustrates the freedom with which a child uses objects to clothe his ideas: "The chair he has just been besieging as a castle, or valiantly cutting to the ground as a dragon, is taken away for the accommodation of a morning visitor, and he is nothing abashed; he can skirmish by the hour with a stationary coal-scuttle; in the midst of the enchanted pleasance he can see, without a

sensible shock, the gardener soberly digging potatoes for the day's dinner."[1]

In Later Childhood the Fanciful Element is Replaced by Interest in Reality. — There comes a time, however, when the ideas which things suggest must resemble realities; so also must the objects employed in dramatic play represent in detail the ones they stand for in life. This attitude begins after the seventh year when, in school, training in facts is stressed and memory work is considered important. This training is accompanied by a corresponding interest in detail and skill in workmanship. The child is no longer satisfied to run and utter a war-whoop as an expression of Indians; he must make for himself an Indian costume, construct a wigwam, and portray a series of activities true to Indian history.

During this period the tendency among teachers of dramatics to limit costume to a slight addition to the ordinary dress seems to the author to be a violation of the laws of mental life. While a cap, a shawl, and an apron were sufficient for many parts in the years before nine, the older child's imagination demands the vivid portrayal of a mood. Care should be taken, however, to keep a healthful balance between the desire for material detail in costume and the power of mental growth through a correspondingly rich imagery.

Training of Imagination Through Dramatic Play. — When children engage in spontaneous dramatizations they not only reproduce the mental images that cluster

[1] R. L. Stevenson: "Child's Play," in *Virginibus Puerisque*, pp. 218, 219.

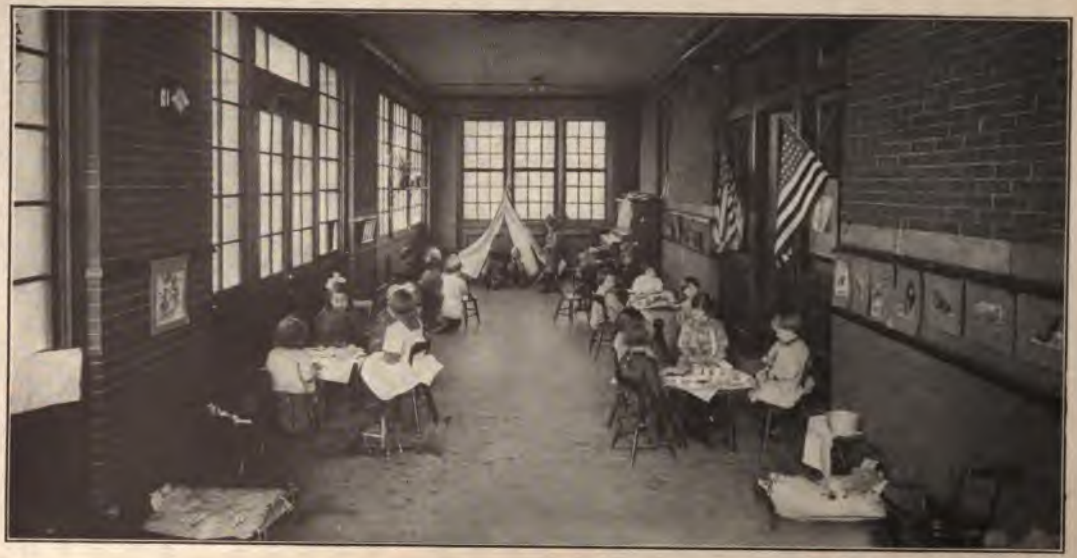
about the thing they are representing, but they rearrange and reconstruct these images in a certain perspective. Some details are rejected, others are stressed, as thoughts flow out into action. For example, in playing fireman or policeman a certain plot is formed as ideas become clarified and settle in a fairly permanent form. And because *self* becomes identified with the play, the emotions enter in, adding a richness and vividness to the thought.

Training in Productive Imagination. — One of the present tendencies in education is to demand a great deal of reproductive work, in which those pupils who possess good memories shine. This tendency in education bears directly upon the problem of dramatic play. While dramatic play is dependent upon reproductive imagination for the stuff with which it works, the very nature of dramatic play makes for freedom in the movement of imagery. The value of dramatics as a field for training productive imagery is apparent at once. If we wish children to do really creative work in life, we must open up fields of practice in which those possessing creative power can exercise it. And as all children possess some degree of native ability in productive imagination, all should have dramatic games. Not everyone, it is true, can expect to invent new machinery, create new systems of philosophy, or develop a new social era; but all can use what native ability they have to construct for themselves the best kinds of environment their abilities permit.

Dramatizing Fact and Fancy. — Facts, fairy tales, and myths afford a child from four to eight years old varied opportunities to use productive imagination.

Children of this age dramatize facts as well as fiction. They have no mental perspective by which they can discriminate between fact and fancy, other than by trying to make both work in life. Dramatic games provide an opportunity to try out both fact and fancy, and to make comparisons with similar events in life. By the tenth year, training in sense perception has straightened out much of the inevitable confusion between fact and fancy. For example, children learn that in fairyland, witches, goblins, dwarfs, and giants perform miracles, but in actual life man awaits the fulfillment of natural forces and laws. After the tenth year, children are less susceptible to the fairy element. They depend upon observation and memory, and look to history and fiction for sources of dramatic play. Stories for this age should include scenes from narrative history and the lives of great men who conquered natural forces and laws through invention and exploration. The records presented for the purpose of study show the pitiable background in stories many children in the playground possessed. When good stories were presented as a basis for dramatization, children found them as satisfying to portray as the cheap stories seen in the movies or the happenings of their own lives.

Training in Observation. — In representing their own conceptions of things, say in playing doctor, soldier, carpenter, or blacksmith, what enters into the children's plot depends upon their observations of the characteristics and activities of each. "Let's play fire!" says one child. "I'll be the chief," says another, and straightway proceeds to construct a



Pittsburgh Playground Association

DRAMATIC PLAY IS A MEANS OF ENLARGING THE CHILD'S PERSONALITY

plot. If he proves resourceful, the other children rally about him and respond to his suggestions, applying their own knowledge of fact to the game. As they become interested in a part, they become stimulated to observe things related to in it real life. The part played vitalizes the interest by providing a social situation or background for the acquisition of facts.

Likewise does observation grow in situations where stress is laid on behavior of different kinds. In representing people the child learns about good and bad, about cause and effect, naturally, without precept or admonition. Surely observation of good and evil in human nature is as important as observation concerning the sense peculiarities of things. It is easy enough to waste time in making unnecessary sense discriminations, easy enough, also, to waste time in character portrayal. Yet, certain standards or types of human nature can be set forth with cameo-like clearness. "In life," says Mrs. Herts, "youth could hardly discern the miser, spendthrift, liar, hypocrite, egoist, prodigal, swindler, gambler, patriot, martyr, and all the rest. Each quality is disguised and mixed with others. But the drama presents a large repertory of such simplified, elemental human qualities, admirably adjusted to the educative apprenticeship stage of life. The primitive traits of which human nature is made up can be observed and studied as a mechanic studies a machine, part by part, before it is put together."[1]

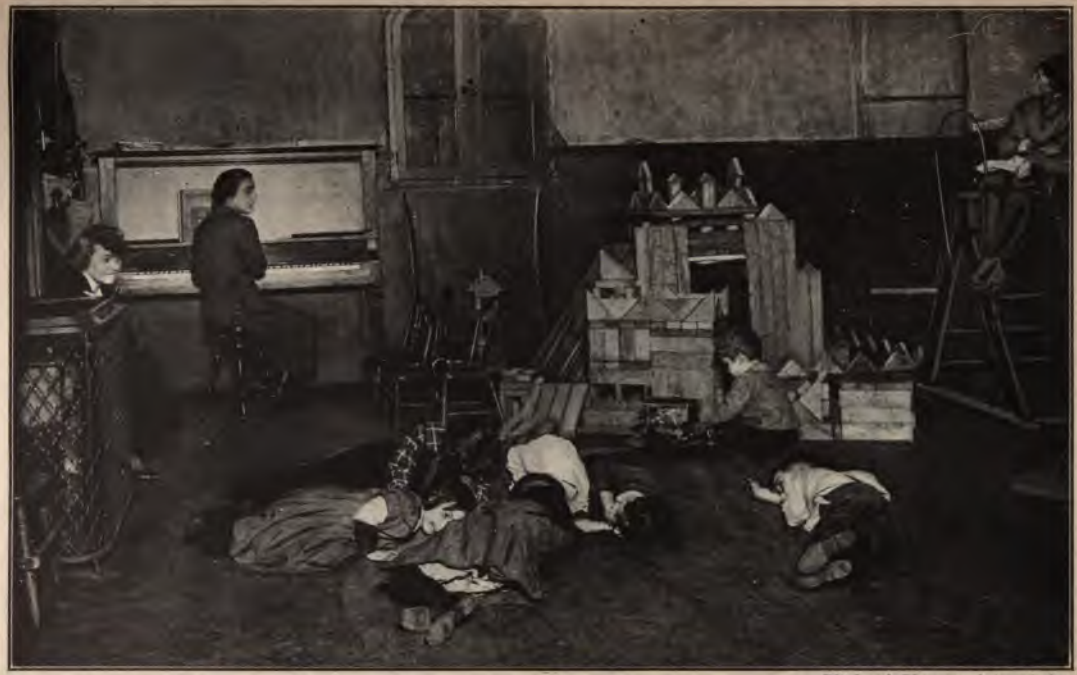
[1] As quoted by the Literary Staff of the American Institute of Child Life, in *The Dramatic Instinct in Children*, p. 11, Monograph 352.

Should Children Portray Evil? — Children often hunger to represent characters which they would shrink from in actual life. A boy likes to play thief and robber, even if delivered up to justice after a period of outlawry. "Give the boy of fifteen his chance to play a thief or a murderer on a stage in the costume and environment of the part," says Mrs. Herts; "he will usually experience all he wants of stealing and killing."[1] The consensus of opinion among educators seems to be that if children represent evil, the results of the evil should follow, either through portrayal of the suffering brought on by conscience, or through penalties imposed by society, and that evil characters which show neither result are not fit to be impersonated by children. On the whole this seems to the writer a commendable viewpoint, yet it remains to point out a limitation in it. It is quite possible to portray evil with such a lure and glamor that its results are lost sight of. It is still more important to keep the moral atmosphere clean and wholesome. If this is done, good and evil characters may come and go, each adding its impress to the mind, which, denying no evil, yet retains an enthusiasm for the good.

A current article on motion pictures and crime[2] speaks of the extreme suggestibility of the mentally young or delinquent, who lack the ability to foresee the consequences of different kinds of behavior and lack the capacity and willingness to exercise self-

[1] *Ibid.*, p. 12.

[2] A. T. Poffenberger: "Motion Pictures and Crime," *The Scientific Monthly*, Vol. XII, April, 1921.



Pittsburgh Playground Association

DRAMATIC PLAY INVOLVES IMAGINATION, FEELING, AND OBSERVATION

restraint. It mentions also the fact that delinquents possess imaginations less controlled and checked by realities. For this reason the author of the article favors eliminating reports of crime from the newspapers, magazines, moving pictures, and advertising posters. Another point remains to be made. Constant association with trivial characters in dramatization is almost as dangerous as with evil ones, for the mind has no height nor depth of interpretation in following such characters. Neither should the thought of the child be focussed entirely on ideal characters, since the result would be to picture conditions contrary to facts in life.

Emotions in Dramatic Play. — It remains to point out certain dangers in the line of emotional training through dramatization. It is so easy to arouse the emotions in dramatic play that there is always danger of overstimulation, especially in artificial situations. Most of us are familiar with an occasional person, at least, who has somehow grown accustomed to lead an emotional life apart from real persons and life situations. The function of emotion is to guide and inspire conduct, not to act as a mere drug. It is possible to promote real growth in emotional control through tying up emotions with the right situations. This is an important function of dramatic play.

Emotional growth through dramatic play is difficult to observe. The child tries on various types of emotional attitudes easily. He is stern and unrelenting when he plays policeman; kind and tender when nursing imaginary invalids; tryannical and cruel when impersonating robbers and desperadoes. If such

plays are supervised the child learns to know undesirable emotions when he manifests them in dramatic play just as he does in life. In a good home evil deeds, selfish acts, and inconsiderate manners are eliminated by their social results. Good behavior meets with rewards; bad behavior is punished. Whether the dramatizing of evil characters leads to a repugnance or a toleration for evil depends upon the wholesomeness of the atmosphere. It is doubtful whether a child applies knowledge so gained to real life. In a crisis children sometimes repress facts which do not fall in with their desires. Many youthful crimes are committed by those who foresee results, but count on being clever enough to avoid them. Yet on the whole good training in dramatics cannot be entirely valueless. Children familiar with real or fictitious characters who are rewarded for suppressing undesirable fears, anger, self-feeling, and the like, and are punished for undesirable responses, have some advantage over children who have not had this vicarious experience.

Dramatization and Habit. — So difficult is it to remake habits on the stage, that a well-known actor-manager has said, "Give me a gentleman and I'll produce an actor." With children it is easy to create such a vital interest in a part that they set out to acquire the manners and customs required to portray it. This plasticity with respect to new habits should be made the most of educationally.

Many children have enlarged their vocabularies through an appreciation of the language in dramatic games, and through impersonating characters in a

story. They lose self-consciousness and speak out the thoughts and ideas of the game or story with oftentimes real dramatic interpretation. If the story abounds in good dialogue they often repeat it verbatim, thus appropriating to themselves the author's vocabulary.

Playing Before an Audience. — There comes a time when the normal child enjoys playing before an audience. When analyzed, the tendency appears to parallel the growth in the social personality at adolescence. The desire for attention and the love of display accompany us throughout life and it is but natural that these native tendencies should crop out with the growth of the social personality. To be the center of things brings an exhilaration, a sense of personal elation. Even to be part of an organized crowd participating in some concerted action is a form of excitement common to mankind. A whole range of human plays depend upon the reënforcement of feeling through group action; playing before an audience and participating in mass action in pageants or festivals are representative of these.

What Part Should Imitation Play in Dramatic Interpretation? — Who has not seen the formalist crystallize every spontaneous expression into an art form? From the early kindergarten plays to the dramatics of college days, we sometimes see action artificially inspired in the players by outside interpreters. How easy it is to change buoyant, spontaneous expression into that over-facile copy of a teacher's interpretation which lays the foundation for insincerity of expression!

Our experts in plays and games are realizing the danger of excessive imitation in dramatic play, and are striving for originality in expression. Kindergartners are studying the spontaneous play responses of children of different ages as they represent bears, birds, fish, etc., to see what part the physiological requirements of the body play in determining the forms of dramatic art. When this is done, it becomes clear why children of about four years of age play bear on all fours, and why they assume an erect position at an age when competition in running is keen. It is clear, also, why children of kindergarten age representing birds spontaneously hop and fly in an erect position where the arms may aid in balancing the movements of the body. They seldom assume the conventional postures one used to see in kindergartens in which the child squatted on the floor with arms pinned to his side to represent wings. To one who understands the physiological and psychological reasons for these forms of dramatic interpretation, each type of expression is seen to have a function in the life of the growing organism.

Coöperation the Result of Dramatic Play.—In dramatic games there is much that looks like social enjoyment. In this fellowship we see natural tendencies toward mastering and submissive behavior in different individuals of the group. In supervised dramatic play one child is not permitted to be "it" whenever he feels an overwhelming desire to display his powers. Children who seek to dominate are led to see the value of group coöperation. In the Children's Educational Theatre, New York City, the

children who play the leading rôles one night shift scenery, hold the prompt-book, or act a minor part another night. They learn that intelligence and faithfulness are as much demanded in acting a minor as a major rôle.

Imitative-dramatic Plays of Value in Supplementing Instinct. — Now that psychologists have discarded the theory of a single-minded instinct of imitation or of dramatization, we find imitative-dramatic plays much more difficult to analyze. In playing store, for example, a number of natural capacities and instincts are called into play. The instinct to manipulate, the desire for leadership, the enjoyment of playing a part, the love of physical activity — all these tendencies, and more, enter in and make the play a melting pot of habits, instincts, and tendencies. Because of the opportunity for interaction of all these tendencies, imitative-dramatic plays have an important biological significance. What the child can learn by practice he is relieved from acquiring by heredity. Such seems to be the plan of life. Imitative-dramatic plays not only supplement instincts, but aid in the reorganization of instincts. Unless we believe that "Nature must be right," we cannot afford to miss the chance such plays afford to help the child to learn new lessons and thus weaken the power of disadvantageous inborn tendencies. The hope of education during the play period and beyond lies in the thoroughgoing reconstruction of life through habits and reason. In supervised dramatic plays we have a real opportunity to tie up instinctive acts to good social habits.

CHAPTER IV

Playing Doll and House

Why Interest in House-plays is Universal. — There are several reasons why house-plays are universal in childhood. First, there is the frequency and familiarity of the sights, sounds, and activities of the home. Secondly, and of more importance, many of the house activities such as washing, ironing, sweeping, and dusting commend themselves to a child because they fit his tendencies for multiform physical and mental activity of a simple, direct kind. Household activities which do not lend themselves readily to simple imitative acts are not so frequently dramatized; thus mending as a dramatic play is less popular than scrubbing, and reading and writing are less frequently dramatized than washing and ironing. Interest in dolls accounts for a large number of house-plays. The use of dolls involves a large number of original tendencies, among which are nurturing or motherly behavior, manipulation, desire for companionship, delight in dramatization, fetishism, collecting, and feelings of kindliness and sympathy.

Doll-play Involves a Number of Original Tendencies. — The nurture of dolls, involving, as it does, motherly behavior toward inanimate objects, is one of the most interesting features of doll-play. What child does not love his rag doll? Most girls and boys

of two and three years of age will play contentedly for a long time with their dolls, hugging them close, petting them, kissing them tenderly, and singing to them. Soon the dramatic interest asserts itself. The dolls are made to eat, sleep, work, talk, play with other dolls, and, in fact, become personalities subject always to the child's control. With children there is an age when a favorite doll may become almost a fetish. Some children sleep with their dolls, eat with them, and drag them along wherever they go. Pleasure in manipulation accounts for a large share of interest in dolls; their household utensils and clothes are objects calling this tendency into action.

Some sex difference in doll-play is noticed even as early as the third year. As soon as the objects handled cease to attract because of their manipulative possibilities, many boys tire of household plays with dolls, while girls show an ever-increasing interest in practicing the arts and crafts of the home. It is possible to account for some of this difference in interest through the larger freedom usually given boys to roam about at will and seek other interests, while girls are kept more strictly at home, and thus often play with dolls because of mere lack of other interests.

Habitation or desire for shelter, is noticeable in doll-play. The tendency to adopt cubby-holes for homes is strong. Dolls and their youthful proprietors frequently live and move and have their being under the sheltering arms of tables or chairs; overturned boxes make houses formidable to attack, and alcoves, recesses, or secluded clumps of trees are easily suggestive of domiciles.

Relative Frequency of Some Forms of Doll-play. — In a study of dolls it was found that, in answer to questions about the relative frequency of some forms of doll plays, "266 children mention a fondness for dressing dolls; 218 like to wash them; 189 have a love of doll parties; 183 a love of sewing for them; 176 a love of playing school; 169 a love of putting to sleep; 137 a love of weddings; 93 of nursing; 82 mention treating them as companions, telling secrets, etc.; 79 love to feed them; 49 to punish them; 36 to play funerals."[1]

Years in Which Children Show the Most Interest in Dolls. — In the same study it was also found that the years from four to fourteen were the ones in which there was the most universal interest in dolls, with a rapidly increasing interest at eight years. It was discovered that boys play with dolls as eagerly as girls, but for shorter periods, and that they show an especial fondness for character dolls.

The Instinctive Basis for Nurturing or Mothering in House-plays. — The writer includes the nurture of dolls, pets, and babies in house-plays because the records of playing house show few plays where some form of nurture does not exist. There is possibly a basis in instinct for some of the interest in such plays. Of the mothering tendency Thorndike says: "Whether the * * * holding, fondling, and petting babies, dolls, pets, and toys by the young require such special instincts or are explainable as the 'real' instincts, modified by complication or distortion of the situations and by training, I shall not try to decide. In any

[1] G. Stanley Hall and A. Caswell Ellis: *A Study of Dolls*, p. 40.

case, in playful hunting, fighting, mothering, fleeing, home-making, and the like, training early permeates and overlays man's original nature."[1]

Educative Possibilities in Nurturing-play. — It is this modification of instinct through training which concerns parents and educators. Whenever a group of children gather together to play house, an educational situation presents itself in which the mothering instinct of little girls, and the tendency boys show to make certain nurture responses, can be so guided that the right attitudes and habits toward the young and helpless are developed. There is every reason to believe that good example serves the same purpose in play that it does in any other situation in life. Groups of children learn to punish offenders and reward those who lend themselves to group purposes. In one house-play recorded a sister administering a spanking to a child playing with her was duly reprimanded and spanked by another child acting as the mother. A point to be remembered is that in supervised play the teacher is near to see that good prevails in the end. Often a teacher possessing real understanding of children can accomplish a good deal by herself assuming some rôle. Without ostentation she can depict a rôle which lends itself to valuable copy.

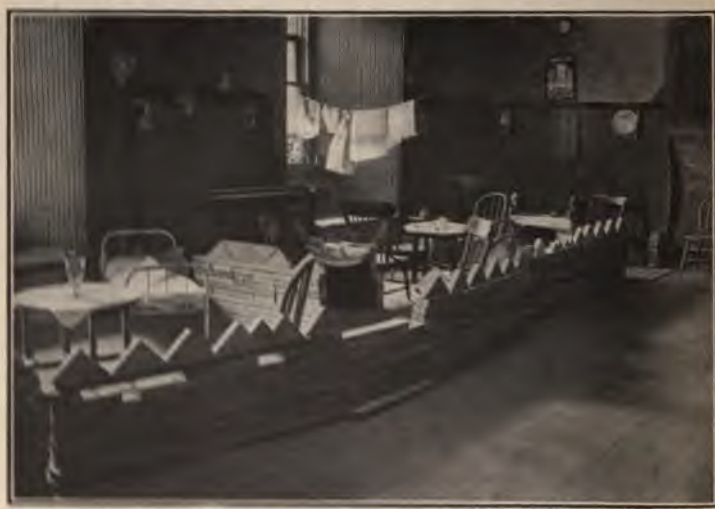
Do the Habits and Attitudes Gained in Doll-play Carry Over Into Parenthood? — Doll-play affords much opportunity for the display of native traits of kindliness and sympathy, as well as their opposites, teasing and bullying. Many parents prohibit cruel

[1] E. L. Thorndike: "The Original Nature of Man," *Educational Psychology*, Vol. I, p. 146.

treatment of dolls on the same humanitarian ground as they would resent a similar treatment of pets. It seems to the writer that parents should make a necessary distinction between the treatment of dolls and toys, involving experimentation, such as cutting off a doll's arms and legs in an effort to operate, and such treatment as beating a doll brutally when in a temper. Many spankings are not administered in a cruel spirit; they are rather experimental acts through which the youthful imitator gets the "feel" of adult acts. While we must allow for the importance of the laws of exercise and effect, we can attach only as much importance to harmless experimentation of this sort as we can to experimentation in kindliness and sympathy. Many youthful tyrants pet and fondle dolls just to try out such acts. A fondness for dolls does not necessarily indicate fondness for babies. Habits and attitudes gained in doll-play have only the same chance for later usefulness that habits of kindliness in any situation have to become a permanent basis for character.

Manipulation as Applied to Household Utensils and Toys. — A little child, apart from training, pulls, pokes, and touches all objects within reach. This original tendency is of the utmost importance in understanding house-plays. Such objects as dolls, dishes, beds, chairs, washtubs, and stoves are much enjoyed by children before put to their real uses in dramatic play. This puttering of the fingers with objects and toys is noticeable in several of the records presented. Babies will sit for long periods fitting lids on pans, covers on jelly glasses, and small boxes into larger ones. It is

difficult to discover how much of form, size, and dimension they learn from puttering with the hands, but of this we may be sure, *the end of finger play is knowledge*. It is through puttering with the hands that children experiment with the things and forces of nature. The skill of the craftsman, the technique of



Pittsburgh Playground Association

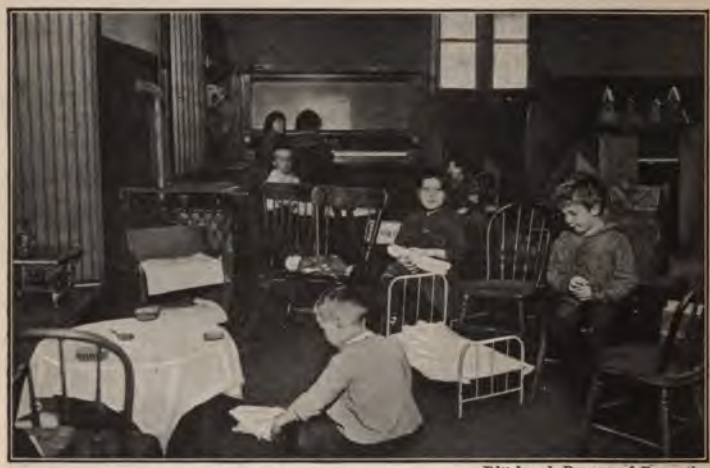
THE HANDLING OF HOUSEHOLD UTENSILS AND TOYS IS A MEANS OF EDUCATION TO CHILDREN

the artist, and the training of the scientist are all bound up in the use of the hands. When children first handle such household utensils as spoons, tin pans, cups, and the like, their attention centers upon such sense qualities as roughness, hardness, and sweetness. Soon, however, they learn the uses to which objects may be put; cups are to drink from, spoons to eat

with. It is then that their play with household objects is of the imitative sort. A little later, more freedom in the use of these objects is noticeable. A pan becomes a drum, a tin can an engine bell, the clothesline a hose. Still later, make-believe no longer satisfies. The dolls must have a complete outfit; they must be dressed as children are dressed; their bed linen is not complete without the conventional sheets, blankets, and quilts; the table service must include necessary dishes, napkins, and tablecloth, while the cooking utensils must approximate reality. Tea parties become social affairs in which the children mimic the actions, bearing, and conversation of adults, exchanging greetings, inquiring after the health of sick babies, and discussing the general work of the home. Great ceremony attends the serving of meals, and woe be to the unfortunate child who through lack of vision or home training puts the skillet or kettle on the dining-room table!

Can Specific Skills and Useful Habits be Taught in House-plays? — As has been mentioned in the discussion of the value of utilitarian play, the civilized child sets the table, washes dishes, scrubs floors, or performs the useful occupations of grown-ups, because by doing so he defines the meaning of such activities. That he may also acquire specific skill and useful habits is often lost sight of. Surely the educator would lose an opportunity did he not overlay with training the spontaneous interest in playing house. For example, there is no reason why children should not wash dolls' clothes and dishes with real water and thus learn the elementary facts about laundering and

dishwashing. They may be shown, also, how to set the tea table attractively, how to make beds properly, how to scrub their dolls' houses well, how to greet each other courteously; and shown spontaneously and naturally, as a part of the play or game.



Pittsburgh Bureau of Recreation

INTEREST IN HOUSE-PLAYS IS UNIVERSAL TO CHILDREN

Expansion of Plot Necessary to Meet More Complex Mental Interests. — Just as the physical equipment used in simple house-plays must be enlarged to meet the demand for increasing detail in dramatic play, so the expanding mental horizon necessitates a more complex plot. A house-play to a child seven or nine years of age is no longer a play in which dolls are merely nurtured and house furnishings manipulated. Rather does it embody a complex plot in which schools, churches, stores, industries, and commerce

are established. Often a play is no more than started when some resourceful child says, "I'll be a nurse," and another, "My baby must be sent to the hospital." But of such development in plot the records bear the best witness.

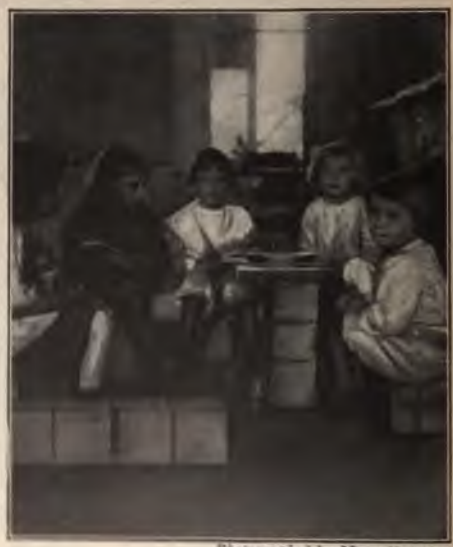
Records of Dramatic Plays

Playing Dolls and House

1. **Doll-Play. School of Childhood, University of Pittsburgh.** — The play leader left two naked dolls on the table without calling attention to them. A little boy first discovered them and picked up the boy doll. Apparently not noticing the fact that the doll was undressed, he wheeled it proudly in a doll cab. His movements were so rapid that the play leader said, "Does Mother wheel babies so fast?" "No, nice and easy," was the reply. In the meantime the girl doll had been taken up by a little boy, who gave it up readily when requested to do so by a little girl. "Where are its shoes?" asked the little girl; "I want to give her a bath." After washing the doll carefully in a basin, the little girl asked for a towel. The play leader then produced an outfit of clothes, and the children put on each garment properly, carefully buttoning and adjusting each one. A group of children had gathered to watch the dressing of the dolls, and some of them built out of chairs a house in which the dolls could live.

This outfit of clothes was carefully prepared in order to give the children skill in dressing and undressing and in buttoning and lacing the clothes of these large dolls. Previous to this the children had devised clothes for smaller dolls themselves.

2. Company for Dinner. Arsenal Park. — The home selected was a small arched alcove in the playroom. In the alcove was a bench made of boards; this served as a shelf or table on which stood a washtub, an ironing-board, and an iron. Four little girls, about six years old, sat cosily around a tea table; one girl was drinking tea; the three others were nursing their dolls. The play leader knocked on the door to announce her visit. One of the children arose to let her in, bowed, and shook hands, then placed a chair at the table for the guest. "How are you to-day?" said the visitor. "Oh, very well," replied the little girl, looking much pleased. She went to the stove and came back with two platters. "Have some meat and potatoes," she said to the company. The visitor ate an imaginary dinner while the other children looked on with evident enjoyment. Soon the visitor said "Good-bye," and went home. The mother put the dishes in the little tub and washed them in water,



Photographed by Mary G. Wade

A Doll's Birthday Party

drying them carefully on a small tea towel. She arranged the dishes prettily on the shelf. The other children continued to play with their dolls.

Such play affords opportunity to help the children form good habits in table manners, assists them to gain skill and neatness in setting a table and in washing dishes, and to gain courtesy and politeness in serving meals.

COMPANY FOR DINNER

3. **Mother and Daughter. Arsenal Park.** — Two children chose an alcove for a house and fenced it in with chairs to keep out intruders. Dolls, cupboards, beds, a doll carriage, stove, and a table comprised the house furnishings. ' You be the mother and I'll be the daughter," said an older girl to a new child, who was experiencing her first day in the playroom. "All right," came the answer. The mother then bent over the washbtub, rubbing out

some doll sheets in imaginary water. "I'm washing the bedclothes," she said to the daughter who had been out wheeling her doll. The daughter then took a cup and gave her doll a drink. This called the mother's attention to the dishes. She left her washing and gathered up the cups and saucers, saying, "I'll wash them." But the daughter preferred to do this herself. She laid her doll on the bed, saying out loud to herself, "I must wash her face," then took the dishes away from the mother. Without any feeling of loss of authority the mother allowed the daughter to take the dishes out of her hands and went back to the tub to finish the washing. She rubbed till the daughter had set away the dishes; then she took the dishes out again and washed them all. She next put an iron on the little stove. While it was heating, she went back for the sheet, folded it, and put it away. Just then her eyes lighted on the dolls. She took one out of bed and placed it in the cab ready for a ride. The daughter appeared and forced her mother to give up the cab. The mother took the sheet she had just folded and covered the other doll with it. She rearranged the chairs, then took all the bedclothes off one bed and made up the other for the doll. A boy entered and began to arrange the saucers on the shelf. He placed the plates together in groups of three and set a cup between each group. "Who is he?" the supervisor asked. "He's the pap," answered the mother. The mother left the boy arranging the saucers in geometrical patterns and went out for a walk. She joined the daughter, who stood watching a group of children play house. Soon they both came

home, bringing the doll in a cab. The "pap" had gone. The daughter put the doll in the small bed and tucked the clothes around it. The mother took the doll up again and wheeled it around the room, this time unmolested by the daughter, who was setting the table. Suddenly the daughter turned around and said to the mother, "Go over there to that house," pointing to the children playing house. Before the mother had time to start, the daughter ran on ahead, getting there first. When the mother arrived, the daughter said to the other children, "That's my mother." The mother had wheeled her doll over. As she took the doll out of the cab, the daughter pointed to it and said, "She's had smallpox." The children in the house went on with their play undisturbed by this announcement; one child was pressing a sheet with a warm iron; another child was dressing her dolls; still another sat on the floor, playing with a toy stove, taking the lids out and fitting them in again. The mother soon decided to go home. The first thing she did on returning was to wash the dishes. Then she stood a while and watched the daughter, who had persuaded the children in the other house to come out and play Ring Around the Rosy. After a few minutes the mother set the table. The daughter returned home with her doll and handed it to her mother, then joined some children who were playing on the slide. The mother wrapped the doll in a sheet, and, still holding it, tried to clear the table; this proved hard to do, so she put the doll to bed. She became so absorbed in watching the children slide that she stood doing nothing for some time. After a

while she swept the floor. A big boy tried to break in the house, and the mother called to the daughter to put him out. Just then the play leader said, "Time to put the toys away."

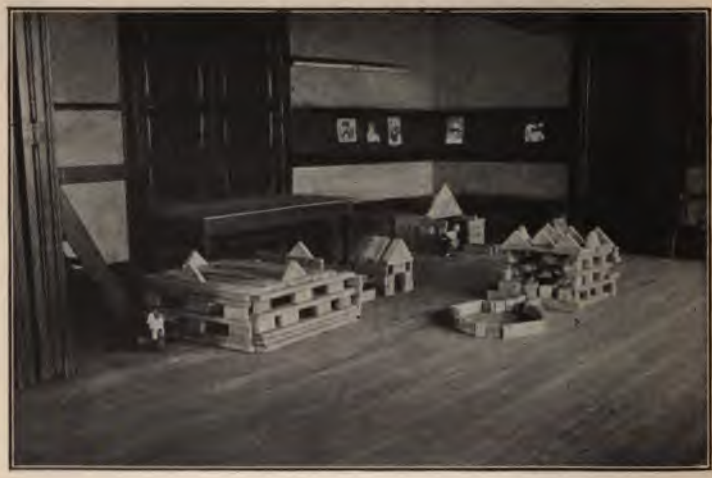
This play lasted forty minutes. The writer presents it in a full narrative form just as she saw it work out, because it is a clear example of a type of spontaneous, unsupervised house-play natural to children under six where the play is left on the plane of instinct. To the casual reader it may seem that no thread of purpose runs through the play. The children's interest shifted rapidly from the dolls to the dishes and to each other; yet each thing they did was of absorbing interest to them. Every act partook of the nature of work; yet to them it was play because they chose what to do and how to do it. The mother was working out a new adjustment. She recognized that the daughter possessed a knowledge of the environment that she herself did not possess; hence she was glad to be told what to do. The doing was absorbing enough in itself. She liked to touch, to feel, and to handle the new playthings, discovering various social uses to which they could be put. The daughter had a clearer idea of what she wanted to do; chiefly, she liked to exert power, to lead, control, and plan the actions of the mother. Unconsciously she was developing leadership, for good or evil, and was impressing upon another her own tastes and habits. To the educator this play is teeming with values which need to be sifted, and freighted with social meaning. When interest in manipulation is at its height how much skill in handling objects can reasonably be expected? What attitudes toward homemaking are established in the undemocratic atmosphere this home depicts? How far was the subservient attitude of the mother due to her unfamiliarity with the new environment and how far to innate docility in the presence of masterly behavior on another's part? All these questions would interest a psychologist who aims to build upon natural capacities in suggesting procedure of a higher order.

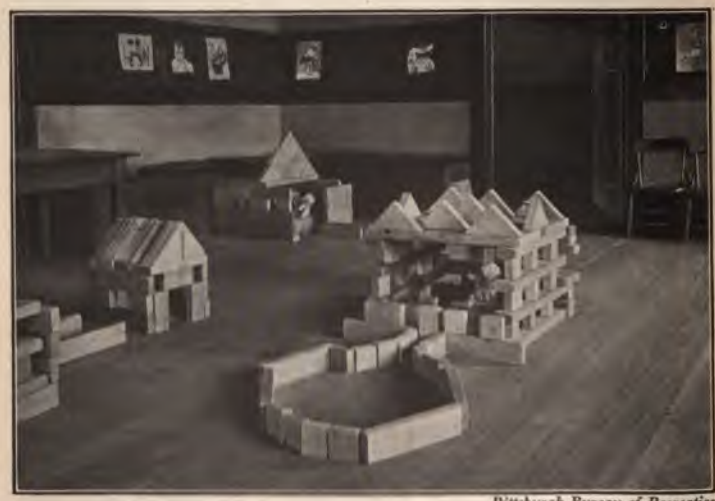
4. **Vaccination. Lawrence Park.** — Several girls made individual houses by marking off a space on the floor. They built tables, chairs, and beds of blocks,

then played that their dolls were ill. (There had been a smallpox scare in the neighborhood and many of the children had been vaccinated.) Some of the boys played they were doctors. The girls carried the dolls to the doctor's office and had them vaccinated. Each doll came home with a mark on its arm.

See the development of this type of play in Hospital Play, No. 1.

5. **Making Dolls' Houses. Washington Park.** — The younger children wanted to have a doll's house that would "keep." The play leader provided a large wooden box and the children suggested having a downstairs and an upstairs, so a board was nailed in to form a partition. The floors and walls were scrubbed clean. A little girl suggested papering the walls. The following day the children were given manila paper and colored crayon with which to design wall-paper. Those making the best patterns were allowed to paper a room. The next day the children were given blue cardboard and white strips of various width to experiment with in making striped rugs. The best rugs were placed on the two floors. Some of the older girls sewed and tacked up white window curtains. Because a kitchen and dining room were needed downstairs the large room had to be partitioned into two rooms. The upstairs was left as it was for a bedroom. For the kitchen, the children suggested having a small table, a cupboard, and one chair; for the dining room a large table, a sideboard, and four chairs. The bedroom was to have two beds and two chairs. Uneeda biscuit boxes were brought out by the play leader for the furniture. The children





Pittsburgh Bureau of Recreation

BUILDING HOUSES FOR DOLLS

helped to plan and make each piece. When it was done they wanted to varnish the furniture. It was placed on a table which was covered with newspapers and each child was allowed to put on one coat of shellac. The next day the children arranged the furniture in the three rooms, brought out the "Do With Dolls," and played house all the afternoon. For several weeks the dolls' house was the center of interest. The dolls were taken for daily rides in the doll buggies, and were put through many kinds of housework. The father doll was usually taken away to work at some occupation and brought home at meal time.

6. **Canning Fruit. Lawrence Park.**—The children of this playroom were often taken to a small farm near the playground. Here they saw several kinds of fruit trees. One day they played they were canning fruit. Each child made a separate house by partitioning off a space on the floor, and built a stove with blocks. The girls played canning fruit and making jelly, using large wooden cylinders for the jars; they arranged the jars on a shelf. The boys offered to carry the jars down cellar; this necessitated extending the space of each house a little. Some of the girls took jars of fruit to their neighbors.

There is no reason why children may not play as spontaneously in making real jelly as in pretending to make jelly, and where facilities permit this is often done in the playrooms.

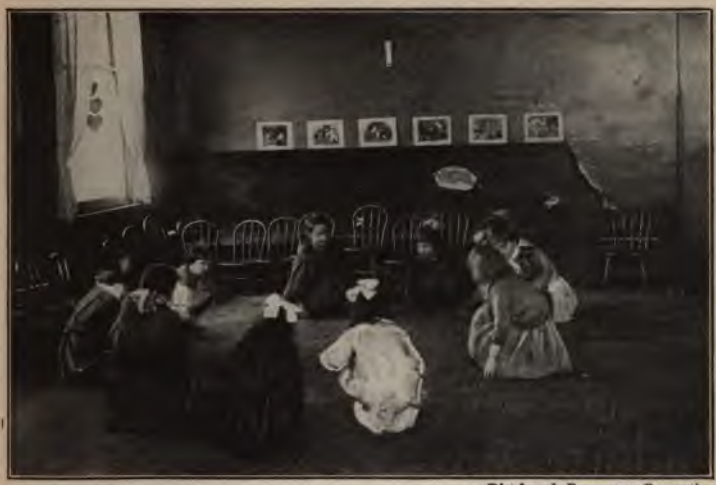
7. **Party. Lawrence Park.** — One child announced that it was her birthday. She wrote invitations to a party and delivered them to her girl friends. They came and played games. After the interest in

games had worn out, the hostess suggested a boat ride. She placed chairs on a table for a boat and the girls jumped in. Two boys offered to be the crew. One girl jumped overboard and was rescued by members of the crew, who swam in after her and together carried her to a hospital. The other girls went home, forgetting to say good-bye to their hostess.

Note the opportunity for playful acquiring of habits of courtesy and politeness.

8. **House, School, and Hotel. Lawrence Park.** — One day the play leader introduced the thought of promptness into the house-plays. She showed the children how to make little clocks for their houses. One group of children kept a hotel. Several children came there to stay all night and asked to be called at a certain time. They lay down to sleep and the clerk got them up at the time they requested him to call them. Another group of children played school. The teacher told them to come at nine o'clock and rang the bell at that time. At noon she sent the children home to dinner. Some of them planned to be late. When they came back to school the teacher wrote their names on the board and kept them after the other children had gone home.

9. **A Sick Doll. Lawrence Park.** — A house was made at one end of the playroom by partitioning off a space with chairs. In the house sat a little girl holding a sick doll. Near by stood a tub of water. She wrung out a cloth in the water and carefully washed the doll's face, then took a dry cloth and bound around its wrist. "It takes every rag I can get," she said aloud to herself.



Pittsburgh Bureau of Recreation

"THIS IS THE WAY WE SCRUB OUR FLOOR"

10. Getting Spanked. Lawrence Park. — A tea table behind a screen represented the home. The family were a mother, a young girl, and an older girl who was ironing. The mother went away. The young girl sat down at the table to drink some tea. She spilled the water on the oilcloth, whereupon the older girl left her ironing to give her a spanking. A small boy was playing near by. He saw the spanking and came over to comfort the girl, saying, "Never mind!" Then he went back to his play. He was George Washington chopping down a cherry tree! But the mother had seen the disturbance. She came running home and administered a spanking to the older girl.

Photographed by Mary G. Waite

BUILDING PLAYHOUSES

This play shows the importance of imitation in discipline. It is evident that the pattern had been set at home and that spilling anything on the table was a punishable offense in at least one home. The boy's protective instinct and the mother's higher sense of justice are good examples of spontaneous kindliness and resistance to injustice. In regard to a situation calculated to produce a display of kindliness, Thorndike says: "The situation 'a living thing displaying hungry, frightened, or pained behavior by wailing, clinging, holding out its arms and the like' provokes attention and discomfort, and may, if attendant circumstances do not shunt behavior over to the hunting, avoiding, or triumphing responses, provoke acts of relief."[1]

11. House and Restaurant. Lawrence Park. — A group of ten girls and one boy, all about nine or ten years old, started a restaurant. They arranged

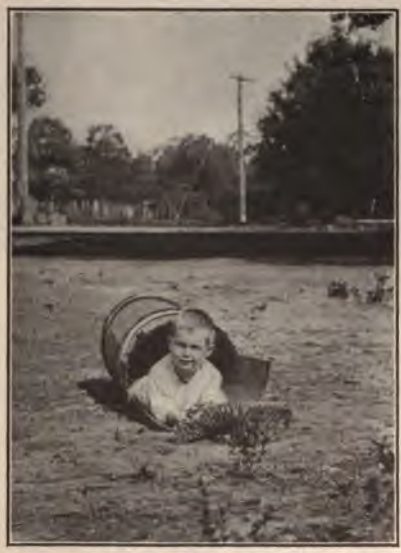
[1] E. L. Thorndike: "The Original Nature of Man," *Educational Psychology*, Vol. I, pp. 102-103.

tables in a long row and covered them with white wrapping paper to represent a tablecloth. Two girls washed and wiped the aluminum dishes and two others set the table. The boy announced that he would take in the money and seated himself at a table near the entrance. When some of the cooks had prepared an imaginary dinner on two toy stoves, they put on white paper caps and aprons and stood behind the long rows of tables. Then the clerk rang a bell long and loudly. All the other children in the playroom left their games to see what was going on. From those entering the restaurant the clerk insisted on advance payment for the dinner, so some of the children ran home to get paper money. The clerk gave each child the proper change after deducting the price of a meal. The dinner proved exciting, for if the boarders did not get waited on at once, they shouted out what they wanted. So the play leader stepped in and quietly supervised the ordering of meals. One mother did not get served as soon as she wished and left the restaurant in indignation, carrying her doll in her arms. Another child ordered roast beef and a cup of tea; still another ordered corned beef. All ate the imaginary dinner with much satisfaction. When they had finished and gone home the waitresses cleared the table; the cooks washed the dishes, and the clerk counted the money. Then the same play started over again.

Interest in this play persisted for several days. It gave each child some principal rôle to enact. The cooks, waitresses, and clerk had interesting tasks to perform, tasks which permitted manipulation of materials and adjustments to people. It was interesting

to see how the children mimicked the manners of their elders. See here also the rich opportunity for giving through imitation ideas of politeness and good table manners and for teaching the processes involved in making change and to emphasize essentials in a good diet.

12. A Community Play. Greenfield School Playground.[1] — "As a result of the summer's play my program can be summed up as a series of plays which grew out of the contact with human nature. The plays and games tell the story of the human family in all its relationships.



A Primitive Shelter

"The community play began by several children choosing for a home a perfectly natural alcove made of bushes. The first few days were spent in organizing the family and placing them in their natural environment. Out of this grew man's needs for the promotion of his physical welfare. Stones were chosen out of which to construct a stove and an old bucket was found for a cooking utensil. The materials used for cooking were sand for cakes, daisies for potatoes, grass for salad, and the yellow center of

[1] This play was developed and described by Kathleen McSweeney and is presented in her own words.

daisies for eggs. A box served as a table, milk-bottle tops became dishes, and paper was cut into table-clothes and napkins. Then dinner was served. The next day's plan was similar except that everything was worked out with more detail. The following day a dominant note was struck in this living program when another family was chosen, Auntie and Cousin who lived next door, thus introducing man's craving for social relationship. The Auntie and Cousin visited the family and stayed for tea. When one of the children said 'How do you do?' she shook hands. This seemed a good opportunity to introduce the visiting game, 'We Go Across the Street.'

"The following day came the idea of commercial relationship. A group of boys started a store. The next day more stores sprang up, a fruit store, a grocery, and a meat market. This led to a division of labor. Day by day the field of play widened until it unfolded in the building of a city. Wheelbarrows served as delivery wagons and suggested the need of drivers and hucksters. The following day some one spoke of the need for money, so a bank was incorporated. One of the boys chose to be a banker and took a corps of assistants. Money was made from milk-bottle tops. Each storekeeper and older citizen was supplied with a bank book. When they came to the bank they brought these books and deposited and drew money. The clerk kept a careful record of all the transactions.

"A new family was added the following day. The other families called upon their new neighbors. As a means of entertainment the hostess was invited to

tell a story; this story hour was enjoyed and repeated at the other houses, with singing.

"Now the mothers found a school absolutely necessary. The children were dressed and sent to school. At recess they went out in the schoolyard for games. At noon the children were dismissed for luncheon and at the sound of the bell returned to school. One day some one suggested a holiday. Every one in the city took Saturday afternoon off and went to the woods or games. The next day was Sunday and all went to church. Up to the tent they marched, seated themselves on the benches and sang 'America'; then church was considered over. Monday the stores reopened and school commenced.

"One day a new note of interest was introduced by the children suggesting the need of a telephone. The following day a telephone was evolved from spool boxes, cord, and a spool. The children took much pleasure in telephoning to the stores, homes, etc. A few days later the play broadened when imaginary fire broke out in one of the stores. A volunteer fire company was organized; the express wagon became a hose cart, and a company of children with buckets started to put out the fire.

"One of the most interesting parts of this play is in connection with the selection of rôles. The same group of children continually played the same parts. One little girl who was the first little mother in the home played the same rôle every day until the end of the season. This seems to indicate that to each and every one of the children the experience was a vital one. The following summer the children who had

taken part in this play the summer before requested to play again the same drama and enact the same rôles."

Here again we see a social situation in which the enjoyment of habitation, the instinct of manipulation, and the social instincts were utilized in a neighborhood approaching a community center. The children felt the need of stores, banks, and schools. This need could have been made the basis for teaching skills in home-making, in banking processes, and in businesslike procedure in the stores. Arithmetic enters in as a factor in filling orders, while problems in engineering engage the attention of those who plan and lay out streets or install telephone systems.

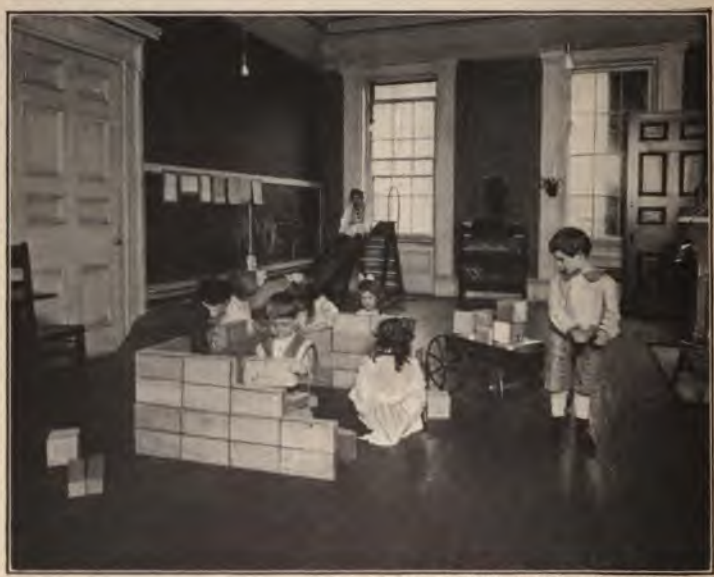
13. **A House Play.**[1] — "The two play houses on the porch came to be considered as an established part of the playground. There were two complete families. The little girl who took charge of the homes was very capable. She ordered the daily events in the homes much as her own mother must have done. The older children were put to work while the younger ones were sent to school. Meals were served regularly. At first the children used stones, straws, and the like for food, but in a short time they brought a few foods, such as crackers and fruit from home. The play went on daily, and although the members of each family changed and the routine of management was altered at times, there were very few days when the play itself was neglected."

Play 13 is similar in content to several previously described, but affords too good an example of children's growth in the use of mental imagery to escape special mention. The play leader comments on the fact that stones, straws, etc., were first used for food, but that, later, real food supplanted imaginary supplies; that is,

[1] Account by Louise Borland.

there had come an inner necessity for the objects used to resemble reality with some degree of fitness fiction failed to satisfy. As we have said before, this interest in detail comes some time after the seventh year, when the more definite working out of mental images necessitates *actual truth* in representation.

The second point worthy of comment in both Play 13 and the one preceding it is the *permanence* of the dramatic form. The little homes and the activities connected with them had become a part of the equipment of the playground, physical and social. A space was reserved for the homes, and certain children were recognized as responsible for certain rôles. These facts seem significant in showing how play interests carry over from day to day and become habit-forming agencies in the lives of children.



School of Childhood, University of Pittsburgh

OUR HOUSE

CHAPTER V

Playing Store

Why Children Like to Play Store. — Store as a dramatic play demands the presence of other children in a happy give and take of social amenities. Children enjoy experimenting with the actions of people as well as with the properties of things and the trade and barter of merchandise afford an opportunity for much human experimenting.

Two or three children coöperate for mutual advantage, and native ability in leadership is sure to appear. A child gifted with social graces and tact often prefers to sell, while one whose interest is in motor activities likes to become a driver or to perform the active physical work about the store.

Manipulation. — Manipulation of materials is also pleasurable and is partly responsible for the interest children take in store-plays. Little children seem to take a spontaneous delight in hoarding objects to use in store-plays; partly for the joy of manipulating such objects, but also because of a native tendency to hoard and collect.

Collecting. — Interest in collecting accounts for part of children's interest in store-plays. As early as the last part of the second year the tendency to collect sticks, stones, spools, bottles, and the like is noticeable. The collecting of valueless objects continues all through childhood, indeed, throughout life.

There is a good deal of variation in the objects collected. Objects of a certain kind are usually collected because they are present in the immediate environment; thus children in the country collect acorns, twigs, or stones, while those in the city collect cigar boxes, medals, etc. Objects cherished dearly at one moment are surrendered carelessly at another as interests change. The sight of another person collecting objects is enough to awaken a like desire to possess. Children under four years of age are likely to collect anything they can lay hands upon. I once observed for a period of three days a play of a four-year-old child involving collecting. It was a crude kind of store play. On the store counter improvised from several long boards were spread out the following articles: a mouse trap, a toy ambulance, a bear, a horse, a cart, a gun, an oleomargarine box, a baking-powder can, paper cookies, blocks to represent sticks of candy, a pencil, a buttonhook, a wheel, castors, a knife, toy dishes, and celluloid animals. A few of these various articles were at first arranged in rows to represent sticks of candy or rows of cookies. But as the range of objects grew, the articles were displayed without system. Doubtless this last was because of lack of space. The objects were still classified in the boy's mind, however, for whenever I inquired about some article, such as coffee or sugar, which none of his articles resembled, he promptly gave some such reply as "I haven't any, but doesn't your little boy want a gun or some bread?" It seemed that the basis of classification in the boy's mind was size and shape. I had noticed this tendency in other children. Record

2 shows children's use of wooden beads, cubes, spheres, and cylinders to represent objects in a grocery store. When customers asked for a particular kind of fruit or vegetable the children selected beads most nearly resembling the shape of the article demanded. This was their way of classifying for shape.

Children of kindergarten age show some interest in arranging and classifying the objects they collect. In playing store, for example, sugar is kept in one place, bread in another, and potatoes in another. All things are not sold in one store; one child keeps a grocery store, another a meat market, and another a bakery.

Progression in the Collecting Interest is Due to Age. — Miss Burk found the collecting interest to be present at six years of age, and to continue through the seventeenth year. She states that the time of greatest interest in collecting is between nine and ten years, when the average number of collections per child is 4.4. She places the first classifications appearing after nine or ten years of age on the basis of color and size, while classifications of kind come a little later. What a child collects, according to Burk, depends largely on the environment. When rivalry enters into collecting the aim seems to be to outstrip others in numbers.[1] This kind of collecting is less common to store play than is that in which arrangement or order becomes the important feature. Thus store plays may become a source of really scientific training in the use of objects.

[1] C. F. Burk: "The Collecting Instinct," *Pedagogical Seminary*, Vol. VII, pp. 205-6.

Collecting as Related to the Hunting Interest.—Probably one reason why interest in collecting is greatest in the pre-adolescent period is the fact that the desire to roam about, to find, and to hunt is strong in this period. In succeeding years the interest wanes or becomes a fad, such as the collecting of souvenir spoons or dance programs.

COLLECTING

Information Gained in Playing Store. — A great deal of information about materials and processes of manufacturing is picked up in connection with store plays. The child who has a dry-goods store learns about such materials as silk, linen, cotton, and wool. By means of pictures and stories he may be shown interesting facts about raw products and about the machinery converting these products into material for clothing. If he keeps a grocery store he learns about food stuffs. His interest is easily enlisted in sources and processes by which meat, butter, milk, cereals, and vegetables come to us. Or he may become a hardware merchant and learn about tin, iron, and copper, and about the processes each undergoes before it reaches the consumer.

Scrap-books a Source of Information. — In connection with store plays children can be stimulated to make scrap-books illustrating food products and the changes these products undergo before they reach the consumer, also to make scrap-books illustrating clothing materials and the corresponding processes of manufacture. Current magazines and advertising catalogs abound in such pictures. Other kinds of scrap-books which are related to the collecting interest are travel books which appeal to the child's love of adventure, machinery scrap-books, bird and animal scrap-books, and "Who, When, and What" scrap-books. Children's librarians make use of the collecting instinct by telling stories which the children illustrate in scrap-books. The children cut out of magazines pictures of scenes, people, and activities described in a story and paste these pictures into a scrap-book. Nature-study teachers make use of interest in collecting by stimulating children to make their own collections of plants and animals.

Information Regarding Money Values and Standard Weights and Measures. — With interest in detail of various kinds comes the demand for money and standard weights and measures. Many schools are utilizing store plays in thrift instruction to teach the value of money and to give real experiences in weighing and measuring. The school children are also taken to the stores; are required to buy with real money, and to report on the weight and measure of the articles purchased. On the playground the children often use milk-bottle tops for money. These tops can be purchased in quantity. When the children

demand different sizes of coin, cardboard can be used to make the smaller coins and milk-bottle tops to represent dollars.

Records of Store-Plays

1. **Store — A Home Play.** — One day R built a hollow square counter and arranged on it a collection of blocks of different sizes. "What are these?" I asked. "These are sticks of candy," he said, pointing to pillar-shaped blocks. "There are *margarine*," showing me a pile of oblong blocks, and "Here are eggs," pointing to a row of small wooden wheels. I suspect the classification and arrangement of blocks would have gone further, but for the diversity in size of the blocks he had collected. At any rate, selling now interested him more than collecting and I was forced to be a customer, ordering by telephone groceries which were delivered promptly to the chair where I sat reading. Play money was furnished me, and I was expected to pay for each article received.

The following day I assisted R to build a long counter out of boards. We placed the supports under the counter. R, not finding a suitable place on the counter in which to arrange classified material, exclaimed, "It won't do!" Then, seeing the drawers underneath, he began to arrange his playthings and blocks in sections. When I asked for candy or cookies he weighed his materials on the kitchen scales and wrapped them in paper which he had rolled around a stick to imitate a grocer's roll.[1]

[1] From the author's unpublished records.

2. **Store. Washington Park Playroom.** — Three four-year-old children enjoyed playing a simple game of store. They asked the play leader for a box of large wooden beads containing spheres, cubes, and cylinders. When anyone came to the store, these children said, "What do you want?" then searched in the box for a bead the shape of which resembled the object named. One day they asked for the scales and weighed each object before selling it.

3. **Grocery Store. Andrews School Playground.**— One boy kept a grocery store. Another boy played farmer. The farmer molded wet sand into all kinds of shapes, naming each shape after some vegetable. He then brought his vegetables to the storekeeper, who sold them to other children.

4. **Lumber Yard.** — Near the grocery just described a group of boys piled up blocks to represent a lumber yard. They sold lumber to customers.

5. **Drug Store. A Home Play.** — Two little girls selected a box to represent a counter for their store. They collected bottles of various sizes and filled them with colored water. Red and pink were made from cinnamon candy, and blue and black from ink. Then, as interest in mixing colors grew, the girls experimented with paints until they had mixed almost every imaginable color. They showed the collection of filled bottles to all the people in the neighborhood, but never thought of selling.

It is clear that to those eight-year-old girls the joy of collecting and experimenting with color was stronger than interest in trade and barter.

PLAYING STORE

6. Farm and Store. Sullivan Playground. — Two boys started a store. Other boys in the group volunteered to be farmers. A group of girls offered to coöperate. The boys planted vegetables, then called upon the girls to assist in gathering the crops. One farmer loaded an express wagon with tin buckets full of vegetables (grass, stones, and sand) and took them to the store. The storekeeper bought the vegetables, then closed his store, saying it was night. After a short rest he set out the baskets of vegetables on the counter and said it was morning. A number of children then came to buy.

7. Millinery Store. Washington Park. — A group of girls eight or nine years old started a millinery store. They set to work making hats out of tissue paper of various colors. They cut and sewed the hats, then

trimmed them with tissue-paper bows, flowers, and feathers. They hung up a sign and several girls came to the store to buy. The older customers found it great fun to try on the hats; usually a selection was made only after trying on several hats. The six-year-old children often took the first hats they saw.

With the girls from eight to nine, the point of the play was the constructive interest, although the dramatic interest ran almost as high. With the younger children, buying was the point of interest.

8. Grocery Store. South Side Playground. — Some boys and girls, eight and ten years old, had great fun collecting objects for their store. They brought from home sample boxes of cocoa, chocolate, and cream of wheat, arranging the articles quite artistically on the counter. Each purchaser was shown everything in the store before he was permitted to tell what he wanted to buy. When he made his choice, the package was wrapped in brown paper, tied with string, and handed to him by a clerk who invariably assumed an air of importance.

9. Store. O'Hara School Playground. — Two large dry-goods boxes served as a counter. An elaborate cash box was constructed out of a tin can and a piece of string. Whenever a customer paid for goods the clerk put the paper money in the cash box and pulled a string which carried the box up to a wire; he then slid the box over to the cashier, who examined the money and sent the change back to the clerk. In this store the buckets, hoops, sand tines, shovels, balls, jacks, and other toys were sold to children in exchange for paper money. At the close of each morning's session these playthings were returned by the children

using them to the storekeeper, who put them away until the next day. This proved a good way to distribute the playthings.

Educational Possibilities in Playing Store

Store-Play in Connection With School Work. — Store-plays are becoming an integral part of a liberal primary school education; indeed, we might almost say of the elementary school as well; and yet the real possibilities of such play represent almost an untouched field. The subject seems worthy of a fuller discussion than was given in connection with spontaneous play.

Sense Education, Memory Work, Drill, and Attention as Used in Playing Store. — Public school education places stress on situations in which training in sense perception, memory, and attention can be directed toward educational ends. Store-plays afford an opportunity for such training through providing social situations in which the native tendencies to collect, to manipulate, and to act in social ways aid and abet the teacher's efforts to secure the result desired. For example, after children have collected objects with which to play store, they can be helped to improve the collections and to arrange them with some regard for scientific method or æsthetic appreciation. The quality of the collections is thus improved and sense education can proceed on a higher plane. Attention to the objects collected and arranged is of the spontaneous kind, and the wide range of most children's collections tends to bring a breadth of interest. Memory drill and review concerning the

objects collected and their place in relation to some social, economic, or scientific system is a matter of spontaneous attention. It takes effort to stand the strain of drill where no play interest is present, and the social store-play helps to bridge the chasm between spontaneous and sustained attention.

These points can best be made clear through concrete examples accompanied by illustrations concerning the part the thinking processes play in such dramatic games as store-play.

Grocery Store

Sense Education Through Playing Store. — The study of foods and of textiles, also the training for some degree of efficiency in the use of both, are a part of industrial education in the elementary school. What better opportunity to learn about foods than through actual manipulation of real objects in a dramatic game? Time should be allowed, especially with smaller children, to touch, look at, lift, and perhaps smell and taste the objects handled. The power to observe can be improved steadily up to the fifteenth year. Children can be urged to take another look where first impressions have been inadequate, and then required to verify the second observation. Let them combine muscle sense with tactual experience and in this way get larger sense data. Memory drill can be utilized, too, when interest is high.

Knowledge of Production of Food Stuffs. — In progressive schools children are taken on excursions to visit farms where produce is raised, factories where it is preserved and canned, and shipping houses and

freight depots through which it is brought to the consumer. Children's native curiosity naturally leads to their gaining information from books concerning each place visited. Our libraries abound in good children's literature regarding farm life and the transportation industry, and interesting facts can be gained in supplementary reading lessons.

How to Develop Arithmetic Through Playing Store. — Children in both urban and rural communities have a close acquaintance with grocery stores. They are sent there to purchase a quart of this, and a pint of that; a peck of this, and a bushel of that; three of this, a dozen of that. They know something about the qualities of the objects purchased; at least, they can be taught to be discriminative buyers and to count their change after paying for things. In spontaneous play children often fail to develop exactness in measuring, accuracy in distinguishing good objects from poor ones, and correctness in making change. But where store games are made the centers of correlation for arithmetic work, children's attention can be directed toward these ends and instruction can become an integral part of play. To carry on such instruction the school equipment should include standard scales and measures, also a toy currency system. Children can contribute other necessary materials. It is easy to collect a bushel of potatoes, a peck of apples, bran, oatmeal, or other materials required for experience in weighing. The teacher or a committee can have charge of the care of all such materials; and a group of children can plan the store, select its personnel, and simulate the social

and economic background of a real store. The responsibility for correct weighing and measuring should vary according to the ages of the children. Even children of kindergarten age can bear some responsibility for counting and measuring. With older children a system of bookkeeping can be established and the pupils held strictly responsible for errors in slips and entries in the ledger. Forfeiture of the right to play a rôle is usually sufficient penalty for carelessness in manipulating money and figures; for at the ages when a system of accounting can be introduced children have so developed the sense of responsibility that social disapproval is a punishment in itself.

Reading and Writing. — Many children learn to read by spontaneous attention to signs on grocery wagons or to labels on boxes. A printing equipment makes it possible for children to label articles in their stores, price them, and thus gradually associate objects with their printed symbols. This can be done even in the kindergarten, although such material and the use of it is more properly a part of the primary school equipment.

Buying as a Means of Learning About Sources of Food Supply. — Children can learn a great deal about sources of food supply by taking excursions in groups to examine supplies. With little children the middle man can be dispensed with. They can make a visit to a farm, if they live in an agricultural community; if not, they can see a community garden and examine at first hand the produce which is being grown for the markets. Where no visits of this kind can be ar-

ranged, something can be gained through a study of catalogs. Many factories advertise their products through pictures showing the processes which food undergoes in being transformed from a raw state to marketable commodities. Children like to make scrap-books showing the history of the foods they use on the table; they acquire much information from such collections of pictures.

Dry-Goods Store

Knowledge Concerning Textiles and Industrial Processes Connected With Them. — Clothing represents another vital interest in childhood. As the elementary schools endeavor to give children some knowledge of textiles and the processes involved in transforming raw materials into clothing and house furnishings, so store plays dealing with textiles have an important function in the industrial program. I do not refer alone to such plays as were listed in the examples of spontaneous play, but also to games of store in which children share somewhat in the processes through which raw materials are changed into usable commodities. Children no longer spin and weave in the home, but they can be shown the essentials of these processes through the use of hand looms and through visits to factories where machine processes are in operation. Let the children collect linen, cotton, silk, and wool to use in playing store. Give information which is simple and practical so that they can detect cotton, wool, silk, and mixed goods by muscular and tactual tests. Help them to see the practical considerations of buying clothing materials

for hygienic and utilitarian purposes as well as for attractiveness. This can be done by providing a large variety of samples to be used in making doll clothes, airplane wings, and sails for boats.

Training in Arithmetic. — Still other types of arithmetical work enter into the dramatization of dry-goods stores. The children estimate the amount of material needed for dolls' garments as they measure for curtains or rugs in a doll's house. Children acting as clerks are expected to measure the goods ordered, and to compute the price of the amount purchased. For equipment the school should furnish scissors, tape measures, thimbles, wrapping paper, etc., while the children should contribute pieces of linen, wool, silk, and cotton to be sold and to be converted into dolls' clothes or furnishings for the dolls' house.

Sense Training. — In the same way that children playing grocery store are taught the sense-properties of foods through observing and feeling these foods, so in the use of textiles they learn the differences in appearance and texture by testing with eyes and hands. Reports of poor sense observations can be eliminated by new sense experiences. Gradually the eye can be trained to act for hand, or hand for eye.

Training in the Three R's. — The relation of the three R's to store plays was discussed in connection with dramatizing a grocery store. In playing dry-goods store new systems of measuring, new combinations of figures, and new words have to be learned and practised, but the methodology of instruction through the spontaneous use of drill and memory work is the same.

Other Store-Plays

As revealed in the records of spontaneous activities, children enjoy playing other types of store than grocery and clothing stores; millinery shops, drug stores, bakeries, five and ten cent stores, department stores, and hardware stores are among those which have the greatest appeal. Besides the educational possibilities already mentioned in connection with grocery and clothing stores, each type presents special opportunities. For example, in millinery shops children can learn something of color and of æsthetic values in combinations, besides gaining a crude manipulative skill. In playing drug store some simple chemical laws can be taught through experimenting with simple dyes or acids and through observing the action of these on materials. In playing hardware store, something of the processes necessary to produce iron, steel, and other metals can be learned through excursions to foundries or to manufacturing plants. In supervising the dramatizing of department stores, the teacher can work for arrangement and classification of materials. It is true that such arrangement is on a strictly utilitarian basis, with little regard for form, shape, or color; but *use* appeals to children, and much information can be picked up in these first efforts to classify on a commercial basis.

CHAPTER VI

Playing School

School-Plays Usually Depict Conflicts with Authority. — In their school-plays children dramatize all the new contacts the school environment affords; especially is this true where unpleasant forms of discipline have attracted attention to contrasts in behavior. It seems to be a native tendency in most of us to recount the human woes that befall us in our adjustments to the demands of group life. Even when we become so well disciplined that we no longer expose our personal struggles and achievements to the cold glare of public opinion, we often delight in a purely imaginary airing of our wrongs, and also derive keen satisfaction from mentally rehearsing our triumphs. Children, on the contrary, are not yet disciplined to test experiences in this subjective way. Their ideas carry over almost immediately into overt action; pantomime and imitative-dramatic play afford them one means to test the meaning of their conflicts with society. And since a large number of their conflicts or adjustments come in school, where instincts and capacities are translated in social terms, it is but natural that school-plays should abound in examples of misdemeanors and mastering and submissive behavior. Children derive a sense of satisfaction from dramatizing the rôles of so-called bad children even when they themselves have no tendencies actually to commit such misdemeanors. By so doing they gain

some sort of emotional satisfaction and some intellectual appraisement of facts. This tendency to contrast other lives with our own is not confined to childhood and youth; it persists throughout life, and seeks outlets through gossip or undue curiosity concerning the personal details of other persons' lives, or, on a higher level, through fiction and the drama.

What Constitutes the Appeal of School-Plays? — Playing school thus becomes a game in which reading, writing, and arithmetic are subsidiary features. The real point of the game is social interaction, in which we see various degrees of mastering and submissive behavior and display with its social results—either smiles and stares of approval or scowls and expressions of scorn and disapproval. Attention-getting and the display of oppositional force are among the keenest sources of satisfaction such plays afford, as the records fully testify.

Favorite Rôles. — Playing teacher is the favorite rôle because it affords the largest opportunity for display and for such physical activities as distributing papers and writing on the board. Could teachers only be present to study their youthful imitators, they would smile at the tricks of gesture, tones of voice, and methods of discipline so facilely displayed to groups of admiring pupils.

The Three R's. — In the records of spontaneous school-plays the three R's are seen to come in for their share of attention. Drawing and spelling lessons become delightful pastimes while self-initiated mock examinations provoke much merriment. Surely this is one example of play as a psychological attitude.

Records of School-Plays

1. **School. Ormsby Park Playroom.** — Four girls about eight years old seat themselves at a long, low table facing a blackboard. A fifth girl is the teacher. The teacher rings a bell, then cleans the blackboard. Two children come in late. "You got to stay five minutes after school," says the teacher, pointing a ruler at the late comers. She gives each child a paper, then writes on the board, "Exsmination in Arithmetic." With great hilarity the children set about working the problems. There are frequent interruptions as they poke each other, crawl under the table, or jump up and down in their chairs. Of course, they are sharply reproved by the teacher. After about five minutes, she collects the papers and stands facing the pupils. "One," she says sternly; all the children sit up straight. "Two"; all stand. "Three," and the children face her. "Now we'll have our physical culture." The children stiffen and appear attentive. "One, two, three, four," the teacher calls out, as she extends her arms sideward four times. Then she repeats the calls for movements downward and upward. "Pay attention!" she says to a child who forgets to do this. "Now we'll play 'I Say'," announces the teacher. The children relax. "I say hands up, hands down." "There! I caught you." The child caught comes forward and becomes the teacher. And so on through various movements the children follow different leaders with evident satisfaction. Then to the same counts, one, two, and three, the children turn, march, and sit down in their seats.

"Now we'll make something," says the teacher. She gives each child a sheet of paper and colored crayon. Then, looking very important, she steps to the board and draws a tree, using quick, broad strokes. But the children are busy coloring their sheets of paper. Only when each child has succeeded in making a bright surface does he turn to the board and imitate the drawing of a tree. All this time a supervisor of writing stands anxiously outside, waiting her turn. At last she rebels at being kept waiting so long, stalks angrily into the school, and takes possession of the board. The teacher deliberately collects the papers.

2. **School, House, and Cowboy. Lawrence Park Playroom.** — Some of the girls have houses; they are mothers working at home. Others are children going to school. At school they sing, draw, cut, and take physical exercises. When school is out they go home for dinner, which is prepared by their mothers. Soon the bell rings and they return to school. At recess they play games. The parents then come to visit the school and inquire how the children are doing. By and by the doctor comes and examines each child. A group of boys are playing cowboy near by. They have stacked chairs to represent houses. These boys look with interest at the school play. Some of them gallop over to the school on imaginary horses and make the school children a visit.

CHAPTER VII

Hunting Plays

Hunting as Related to Food-getting. — Thorndike lists hunting among food-getting protective responses, and says: "The presence of this tendency in man's nature under the conditions of civilized life gets him little food and much trouble. * * * Teaching, bullying, cruelty are thus in part the results of one of nature's means of providing self and family with food; and what grew up as a pillar of human self-support has become so extravagant a luxury as to be almost a vice."[1]

Persistence of the Hunting Response in Modern Life. — In speaking of the persistence of the hunting response, Thorndike says: "For example, the readiness of the hunting response persists even in spite of the inadequate stimuli and absence of rewards of a modern village or town, so that, if habitual restraints are removed, men will gladly leave their work to chase an escaped cat. They will, with slight encouragement, undergo notable privations and expense to spend a few days in tracking game and possessing themselves of animal carcasses got by so near an approach as is possible to man's original naked-handed pursuit."[2]

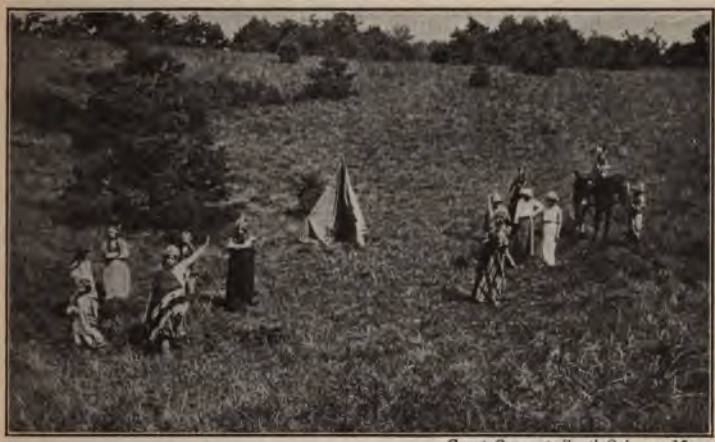
The Culture-epoch Theory Applied to Hunting Plays. — Many teachers attempt to apply the culture-

[1] E. L. Thorndike: "The Original Nature of Man," *Educational Psychology*, Vol. I, p. 53.

[2] *Ibid.*, p. 267.

epoch theory. They approach the formal subjects of the school through the epoch of culture in which children are supposedly living. For example, at a certain time children's minds are filled by teachers with literary and institutional products of the hunting epoch. Likewise children are encouraged to make implements used in the hunt. Modern psychologists regard the effort to postulate more than a general correspondence between the development of the child and that of the race as unscientific procedure. They consider that children like stories of Hiawatha and other boys living in a hunting epoch only because the life described is simple and attractive. That children are as interested in the hunting exploits of modern soldiers was evidenced during the late war. Children like stories and games of any kind dealing with hunting, flight, and pursuit. It is not necessary that the stories or experiences should exist as a part of racial inheritance to be attractive.

Playful Manifestations of the Hunting Instinct. — Children's play abounds in examples of spontaneous flight and pursuit. The baby pursues his mother with outstretched arms, and hides his face in her lap when he is captured and held. Children seldom lose an opportunity to chase small escaping creatures, birds or butterflies, field mice, or fleeing cats and timid dogs. Entirely apart from training, they show a tendency to pounce upon and grasp these resisting creatures, exhibiting annoyance if they lose a catch and hence fail to investigate the nature of the escaping object. Some children are not satisfied to examine their prey, but torment and tease until disciplined for



Camp Quanset, South Orleans, Mass.

THE PASSING OF THE QUANSET TRIBE (INDIAN PAGEANT)

cruelty. In rural communities with what patience the young archer perfects his shot and tirelessly pursues his game, bringing down birds and small animals with his missiles! Children seldom care for the birds' eggs they plunder, the fish they strive so hard to catch, the bettles and bugs they collect and sometimes dismember. They do, however, show a tendency to exhibit their treasures to some approving person. When the hunting responses are called forth by human beings we have the pursuit, capture, and holding of the victim, with either teasing and bullying as the result, or fighting if the one pursued is ready to defend himself.

Many hunting activities are carried on in groups or gangs. In some of our large cities every corner has its young with a plan of defiance of law and order, its

group rules for the hunt. And woe to the coward or hero who defies the law of the pack!

Predatory Organizations Among Gangs. — Sheldon found 934 different societies or clubs among 1139 boys, and 911 societies to which 1145 girls belonged. Puffer says that three out of every four boys belong to a gang. Sheldon's study of the institutional activities of American children shows that the typical plays of boys of twelve years include robbers, clubs for hunting and fishing, play armies, and organized fighting bands between separate districts. The progression in this interest is shown by the following table, as is also the fact that such plays seem to culminate from eleven to fifteen years of age.[1]

TABLE NO. 1

Age	8	9	10	11	12	13	14	15	16	17	Total
Number of predatory societies	4 4	5 2	3 17	0 31	7 18	1 22	1 11	3 7	1 1	0 0	Girls, 25 Boys, 113

Something Difficult and Dangerous to Do. — "Something difficult and dangerous. That I think is the first requisite in boy life. Whether or not the thing accomplished shall also be lawless is a matter upon which the boy will show a laudable catholicity of taste. * * * As to the precise form of difficulty and danger required, that is a secondary consideration. Certain preferences, nevertheless, are constant and of great significance. In almost all

[1] H. D. Sheldon: "The Institutional Activities of American Children," *American Journal of Psychology*, Vol. IX, pp. 425-48.

children's games after the age of six, there is either the element of hiding and finding, flight and pursuit, or that of contest. After the age of eleven or thereabouts, there is predominant in the most important boys' games the element of team play." * * * And again, "The sort of life toward which the boy is aimed is evidently a mixture of hunting, of individual rivalry, and of tribal war. * * * Taking all the evidence together, I think the genius of boyhood and adolescence centers somewhere on or near the raid — in some combination of stalking, chasing, absconding, all united in the form of team play against another gang — those other fellows * * * whom one can also threaten, harry, and despise, with much opportunity for intertribal wit and repartee."[1]

Many Hide-and-Seek Games Involve the Hunting Responses.—It remains to discuss the part played by the hunting instinct in more formal games involving chase, flight, and hiding. Hide and seek is played by children the world over. The playful infant hides his face against his mother's arm in order to get a sense of alienation and return, and children play hide and seek games in rural communities or in crowded city streets. In many chasing games such as in Fox Chasing and in Hare and Hounds, certain handicaps placed upon the chasers protect the fugitive and give point to the game. Complexity is added to certain games by the invention of safety zones; that is, the pursued is safe when touching wood or a goal, by squatting, or the like.

[1] J. E. Lee: "Play as an Antidote to Civilization," *The Playground*, Vol. V, p. 110.

Organized ball games partake of the nature of the hunt in that there is attempted mastery over an escaping object. Baseball, football, and cricket can be utilized to afford social situations in which the hunting responses are trained and organized for social group purposes. These games are sometimes classed as hunting plays, although they show more of the characteristics of fighting plays. A wide range of children's games involves hunting for hidden objects; such games are Button, Button and Hide the Thimble. A large number represent a chase for the possession of a vacant chair or a vacant place in the ring; such games are Going to Jerusalem, Stage Coach, and Flower Basket.

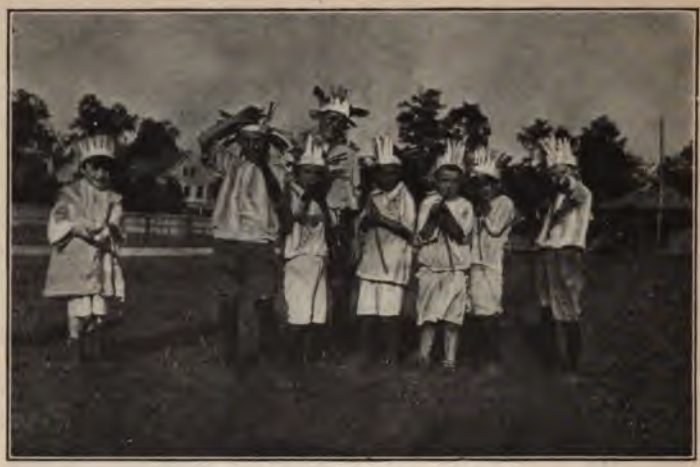
The Educational Significance of Hunting Plays. — This collection of spontaneous plays contains a goodly proportion of hunting plays. Hunting plays are found in the repertoire of children's play the world over because the hunting responses are ingrained in original nature. Hunting plays persist throughout childhood and the pre-adolescent period because they function in the organization of impulses, instincts, and habits. They provide an outlet for vigorous activity and give opportunities for the gregarious tendencies, for mastering behavior, for coöperation, ingenuity, strategy, and leadership. It depends upon supervision whether these plays degenerate into teasing and bullying contests in which oppression of the weak and defiance of law and order become the rules of the game, or whether kindness, a sense of justice, and fair play are evolved as means of control. Under wise supervision, such as the Boy Scouts' and Campfire

Girls' organizations afford, we see the normal use of the hunting instinct. The records of these organizations show that our American youths are as willing to undertake difficult and hazardous undertakings for the benefit of society as to play bandits and robbers.

The Hunting Type of Mind in Relation to the Drama.— The following quotation shows the possible relation of the hunting type of mind to art. "The interest of the game, the alternate suspense and movement, the strained and alert attention to stimuli, always changing, always demanding graceful, prompt, strategic, and forceful response; the play of emotions along the scale of want, effort, success, or failure — this is the very type, psychologically speaking, of the drama. The breathless interest with which we hang upon the movements of play or novel are reflexes of the mental attitudes evoked in the hunting vocation."[1]

Cowboy and Indian Plays Involve Hunting Responses. — Both Indian and cowboy plays include hunting responses. The dramatization of Indians appeals to children chiefly because of the human interest their lives and characters afford. Indians represent vigorous, active types of persons who react to environment on a level the child can understand. A child of six years likes to imitate Indian children riding their ponies and learning to shoot with crude bows and arrows. He enjoys building imaginary fires, cooking food, and caring for the Indian papooses. Gradually his interest shifts to more adventurous sports and activities. With children from seven to nine or ten

[1] J. Dewey: "Interpretation of the Savage Mind," *Psychological Review*, Vol. IX, pp. 217-230.



PLAYING INDIAN

years of age hunting becomes a game involving competition in play marksmanship. The child imitates Indians pursuing and capturing wild animals. About the same age interest in construction is high; building wigwams, laying campfires, and making crude suits out of paper or cloth are keenly enjoyed. As soon as the historical interest begins to develop children like to read stories of Indian wars and often spend hours at a time dramatizing the thrilling tales of adventure found in both history and fiction.

Cowboy Plays. — The cowboy interest is less vital, but still runs high with boys from six to nine years. The preference for stories of frontier life and for moving-picture shows depicting thrilling adventures of cowboys testifies to this interest. The manufacture and sale of cowboy suits for children has become a profitable industry. The cowboy appeals chiefly to

the growing boy because the boy loves adventure and because cowboy stories tell of things that are difficult and dangerous to do.

Records of Hunting Plays

1. **White Men and Indians. Washington Park.** — The children play they are white men hunting in an Indian forest. An Indian brave sees them and reports the news to the chief, who summons all his braves. After much gesturing the braves mount their horses and gallop off in wild pursuit of the intruders, capturing all the white men. The Indians then dance around their captives, exhibiting in their dance the movements of the hunt.

This dance was most interesting because constructed from spontaneous movements interpreting the children's own conception of the hunt. Of course, Indian pictures and music were supplied as an incentive.

2. **Little Red Feather. Lawrence Park.** — An Indian camp is constructed. The children select braves and squaws to live in the camp. A small child is named Little Red Feather after a hero in a story. The braves tell Little Red Feather to ride off to the woods on his pony; then they depart for the hunt. When they return from the hunt and sit down to a meal prepared by the squaws, they discover that Little Red Feather is not among them. The braves jump up and ride away on their horses. The search proves vain and the braves ride back to camp, shaking their heads at the anxious squaws, who stand outside the wigwams shading their eyes as they gaze far off in the distance. The chief then points to the cowboy

ranch. All the braves ride off in that direction. On the way they meet and capture a group of cowboys; not finding Little Red Feather with these cowboys, they release the cowboys and ask their aid in the search. All ride off in different directions. At last little Red Feather, fast asleep under a tree, is found by one of the cowboys and is brought back to the Indian camp. With loud shouts the Indians place Little Red Feather in their midst. Both the cowboys and the Indian braves dance merrily around him while the squaws hop up and down near by, grunting their satisfaction as they dance.

In plays of this type note the enjoyment of flight and pursuit, of imitation of the outward symbols of Indian dress and life, of manipulative activities, and, most of all, of large, free, unrestricted movement.

A Pilgrim Thanksgiving. Lawrence Park. — About Thanksgiving time when the play leader told stories about the Indians she found that the children associated Indians chiefly with cowboys. Gradually, however, as the result of listening to stories, the children began to take interest in historic events and to dramatize scenes connected with these events. One day they made Indian caps; later the interest in Pilgrims led to the making of Quaker caps. Both Pilgrims and Indians hunted and cooked food. Girls and boys played these rôles; some were Indian squaws, others Indian braves, and still others were Pilgrims — men, women, and children. One day a Pilgrim went to an Indian's tent. The Indian gave him food while all the braves danced their hunting

dance. Each day something new was added to the play until the following plot grew up:

Event I. Indian camp. Braves and squaws are seated around the fire; the squaws are making baskets; the braves are smoking pipes; the Indian chief walks up and down.

Event II. Pilgrim home. Mother and children sit down to a table but find no food.

Event III. Indian camp. The chief drops his ear to the ground. He hears the sound of deer and makes a sign to his braves, who jump up and down for joy. All get bows and arrows and run to the woods. Soon they return, place the captured deer on the ground, and perform a dance around it to show their satisfaction. After this ceremony, the squaws cook the deer and partake of the meat. One of the braves steals away to the Pilgrims' home, carrying some corn he hopes to trade for trinkets. When he finds the Pilgrims have nothing to eat he goes back and tells his chief. All the braves go over with the remains of their deer. The Pilgrims rejoice and invite their neighbors in for a feast.

Event IV. Pilgrim home. The Indians come over with corn and show the Pilgrims how to plant. The little children work with their mothers and fathers.

4. **Robinson Crusoe: A Play of Adventure. Lawrence Park Playroom.** — In the playroom hung a picture of Robinson Crusoe and his man Friday. One seven-year-old boy noticed the picture and began to talk about it. It seemed he had heard the story at school. This boy said to his companion, "You be Friday, and I'll be Robinson Crusoe." Then, to

himself, "First, I'll need a boat." He thought a while, then turned a table upside down to represent the boat and found two brooms for oars. He discovered he could make the boat rock by pushing his feet against the table legs. After a while he jumped on to a raft (a large piece of cardboard) and floated to the shore. Here he built a fire (selecting a gas grate for the fire) and put up a cloth tent. Soon he found footprints and followed the imaginary tracks carefully until he discovered Friday, whom he brought back to the tent. Both went fishing and shooting. They brought home fish and wild animals; they skinned the animals and cooked the food.

This play lasted four days. Both boys loved adventure. Robinson Crusoe was the same child who played he was George Washington cutting down the cherry tree, in one of the house-plays previously recorded. The author includes this play under Cowboy and Indian Plays because it appeals to the love of adventure and involves chasing and hunting activities.

5. **House and Robbers. Andrews School.** — One rainy day the children were playing in the hall. Four girls had built houses, outlining rooms with blocks. The houses contained porches and rooms of various sizes; in one a telephone was installed. The dolls living in these houses visited each other and went to market. A group of boys began to tease the girls and annoyed them so much that the girls' play was broken up. The boys were dramatizing burglars. One boy said he was a policeman; the other boys said they were the burglars, and would give the policeman a chase. The girls, seeing their chances for house play thwarted, now entered into the boys' play. It was supposed to

be night; some of the girls went to bed; others started away for a visit, but came home unexpectedly in order to chase the robbers. Sometimes they caught the robbers, sometimes not. They always telephoned the police, who usually caught the robbers and took them to court. One boy acted as the judge and decided what to do with the prisoners.

Is not this an example of how teasing often originates in boys' love of adventure? The boys teased the girls because there was nothing else for them to do; it was raining and all the children were crowded into a narrow space in the main hall of the schoolhouse. The instant a boy suggested dramatizing a policeman the idea of robbers sprang up. This play appealed because it gave them a game of chance and hazard, involving chasing, hiding, and catching, with a dramatic courthouse scene at the close. Observe how easy it was for the play leader to turn this love of adventure into a better channel in the Boston Tea Party play, which is next described.

The Boston Tea Party. Andrews School Playground. — The same boys who had been robbers and policemen began to build forts out of some blocks left by the girls. The play leader suggested that the group dramatize the Boston Tea Party. Most of the boys seemed to know the story fairly well. Finding a large box for a boat, they rowed it over to the American fort. The captain of the British boat, accompanied by soldiers, came to the American fort with a written message telling about the tax on tea. The Americans tore up this note. The British returned to their boat. That night the Americans held a meeting; they dressed up as Indians and while the British slept they dumped the tea overboard. When the British found out that the tea had been thrown

out, they started a battle. The Americans won and had a parade.

Both House and Robbers and the Boston Tea Party belong to the type of plays included under Cowboys and Indians; they appeal to love of adventure.

CHAPTER VIII

Fighting Plays

The Fighting Instinct. — During the World War much was said and written concerning the fighting instinct; current educational beliefs were assailed by contending theorists and a clearer formulation of some of the psychological aspects of the fighting instinct was the result. Several of these viewpoints will be touched upon in our discussion of the individual and group aspects of pugnaciousness. The fighting instinct is a secondary instinct in that it presupposes the presence of other instincts. McDougall assumes that the general tendency to angry behavior of some sort at the persistent thwarting of any instinctive response is an original tendency; in the main Kirkpatrick and Thorndike also agree with this view. Many instincts, very different in character, if thwarted in their natural expression give rise to the fighting responses. Thus we see babies push and scream when held tightly because the instinct for physical activity is thwarted; children giving rein to the hunting instinct, chasing a dog or a fleeing comrade, show irritation and exhibit fighting movements if checked in the course of their chase; boys or girls interested in collecting chafe if their treasures are despoiled, while the thwarting of other instincts, such as self-display, mastery, and sex, also leads to fighting responses.

Discarded is the viewpoint which considers fighting as a single instinct, aroused and called into action by fairly definite and well recognized situations. Experi-

mental studies of the fighting instinct have shown it to consist of a large number of specific responses involving personal encounter in the form of scuffling, crowding, pushing, wrestling, and the like, accompanied by temper and anger. Fighting plays are thus seen to be difficult to analyze on account of their complexity and the variety of situations in which they occur.

The Evolution of Pugnacious Behavior. — Before a child has passed the first year most parents have observed signs of the fighting instinct. In tracing the appearances and development of the fighting responses we notice, if we observe carefully, that children of three years do not fight with their playmates or exhibit fighting movements when in opposition to adults from the sheer joy of the combat, but because some instinctive activity is thwarted, or because they need to redress an injury. From the third year onward there is rapid growth in the tendency to combat anyone who occasions discomfort, or thwarts cherished rights and wishes. A mother often meets resistance when she attempts to put a child to bed; likewise her efforts to withdraw objects which incite her child's curiosity sometimes occasion fits of temper or fighting. If a boy is hit by another boy he instantly hits back, unless the motor response is inhibited by fear or will power. Until approaching adolescence he prefers to settle difficulties in a direct physical way. Might is right until a new code of settling disputes is agreed upon by the group.

Toleration and Justice Originate in Force. — Adults show a regrettable lack of understanding of

children's combative behavior from the first immediate physical responses of this kind to the later reasoned intellectual and moral acts which take permanent root in habit and character. Usually both boys and girls are forbidden to fight, and are severely punished if they do so. But the instinct is so strong that many boys and girls either fight without thinking of consequences or look the punishment full in the face and fight anyhow. Punishment seldom eradicates the tendency to fight, except in the cases where children have weak wills and can easily be coerced. Parents seem to loose sight of the fact that toleration and justice originate in force, and have a permanent basis in force, not in moral feeling or in the conscious calculation of what is best from the standpoint of expediency.

The Sociological Significance of Combativeness. — McDougall says: "The instinct of pugnacity has played a part second to none in the evolution of social organization, and in the present age it operates more powerfully than any other in producing demonstrations of collective emotions and action on a great scale."[1] A prominent authority on the psychology of childhood says: "The trouble with parents and teachers often is that they want to omit the first crude stage of the tendency and come at once to its higher levels; but on logical grounds alone it is hard to see how, if a boy has been required to inhibit such pugnacious tendencies on the physical level, he can later on fight for country or friends or principles. He has not known what it means, when thwarted, to stand for his wishes

[1] W. McDougall: *Social Psychology*, p. 279.

and rights; he has not known the sweets of success or the shame of defeat; he has not known what it means to suffer for the sake of gaining something that seems worth while. The door has been shut on all this opportunity when first the instinct was strong; how then can we expect him later on to fight his difficulties, take his stand for the right, to suffer for it if need be?" [1]

Ellwood says that the view is erroneous which holds that the instinct of pugnacity in man must have been stronger in primitive life than now, and adds: "It is not improbable, therefore, that in the whole course of human evolution the fighting instinct has greatly increased in strength." He gives the following suggestions in regard to the scope and use of the fighting instinct: "Whether or not the fighting instinct needs to be exercised against human beings in order to maintain it at normal strength is an open question. There seems to be but little danger of the fighting instinct in any race dying out, and the more reasonable view is that its legitimate exercise in civilized society is in combating the moral and social evils which prevent humanity from realizing its ideals, rather than in actual physical conflict between individuals and groups of individuals." [2] McDougall stresses the part pugnacity has played in the evolution of social organization. He emphasizes the use of collective

[1] N. Norsworthy and M. T. Whitley: *The Psychology of Childhood*, p. 56.

[2] C. A. Ellwood: *Sociology in Its Psychological Aspects*, pp. 217-18.

combat in communities and the more refined forms of combat within communities.[1]

George E. Johnson believes in organized training for combative activities. "What this pugnacity needs now," he says, "is to be directed, to be enlightened, to be tempered with the will to endure so that consecrated to some ideal it will know no yielding power while life remains."[2]

Should Girls Engage in Fighting Plays? — Although the fighting instinct is stronger in boys than in girls, it is present in both sexes and needs exercise. If this instinct has proved as valuable in race development as some sociologists would have us believe, it seems a lamentable lack of foresight to leave our girls out of calculation in planning for training the combative instinct. There is no reason why women should be patient and long-suffering in the face of opposition, why they should train themselves to be subordinate in matters other than those demanded for group welfare. One psychologist throws out the query: "Is it possible women would not be so open to the criticism of being 'lacking in honor,' of 'not understanding fair play,' or of being sneaky and underhanded if this tendency had received proper treatment in childhood?"[3]

Educational Procedure in Using the Instinct of Combativeness. — If the foregoing discussion has

[1] W. McDougall: *Social Psychology*, p. 279.

[2] G. E. Johnson: "Play as Moral Equivalent of War," *The Playground*, July, 1912.

[3] N. Norsworthy and M. T. Whitley: *The Psychology of Childhood*, p. 56.

accomplished what the writer had in mind, it has pointed toward the conclusion that the fighting responses are so intimate a part of our original equipment that it is impossible to eradicate them. Substitution is the only course. This does not mean, however, that we commit ourselves to the viewpoint heard so often in connection with criticism of the League of Nations, namely, that fighting is so deeply implanted in original nature that we can never settle disputes by arbitration. Even the biologist admits the fact that human nature can be changed to a certain extent. That is, situations can be so altered that original tendencies to action have no chance to function harmfully.

A practical consideration of educational procedure in working with combative behavior would be somewhat as follows:

On the physical plane we should endeavor to avoid as far as possible situations which bring undesirable fighting responses. Likewise we should refuse to eliminate situations in which fighting can be used to teach fair play, protection of others' rights, and the substitution of unselfish aims for personal gain. We should eliminate the bullying and teasing of those who are unable to resist. Where teasing is between equals it has some value in that it develops resourcefulness and enables the child teased to set up barriers of defense. All plays involving personal encounter should proceed according to rules, but so far as is possible, the children or the group involved should feel the *necessity* and *urgency* of the rules. Self-control and inhibition should be demanded and enforced.

combat in communities and the more refined forms of combat within communities.[1]

George E. Johnson believes in organized training for combative activities. "What this pugnacity needs now," he says, "is to be directed, to be enlightened, to be tempered with the will to endure so that consecrated to some ideal it will know no yielding power while life remains."[2]

Should Girls Engage in Fighting Plays? — Although the fighting instinct is stronger in boys than in girls, it is present in both sexes and needs exercise. If this instinct has proved as valuable in race development as some sociologists would have us believe, it seems a lamentable lack of foresight to leave our girls out of calculation in planning for training the combative instinct. There is no reason why women should be patient and long-suffering in the face of opposition, why they should train themselves to be subordinate in matters other than those demanded for group welfare. One psychologist throws out the query: "Is it possible women would not be so open to the criticism of being 'lacking in honor,' of 'not understanding fair play,' or of being sneaky and underhanded if this tendency had received proper treatment in childhood?"[3]

Educational Procedure in Using the Instinct of Combativeness. — If the foregoing discussion has

[1] W. McDougall: *Social Psychology*, p. 279.

[2] G. E. Johnson: "Play as Moral Equivalent of War," *The Playground*, July, 1912.

[3] N. Norsworthy and M. T. Whitley: *The Psychology of Childhood*, p. 56.

playing foot-ball and base-ball, from swimming, dancing, and track games than can be gained through formal gymnastics. This is not only because the recreational advantages are superior in group games and sports, but also because the situations affording combativeness in strength, speed, and daring are life situations in which the training that is gained is of the practical sort. The writer has selected eight well-known games for the purpose of analyzing the social situations such games afford for the training of combativeness.

1. *Cat and Mouse.* — In this game, children with clasped hands wrestle in circle form to assist the passage of a child called "mouse" and hinder the chase of the one impersonating a cat. The dodging and wrestling movements are valuable for muscular development, and the group contest affords training in unanimity of purpose.

2. *Circle Ball,* a game popular with both boys and girls, is also played in circle form with a child in the center endeavoring to intercept the passage of a basket ball tossed from one member of the outside circle to another. Here fighting is involved in reaching and jumping movements.

3. In *Dodge Ball* half of the players stand in a circle attempting to hit with a basket ball the other half inside the circle. Those in the center seek to avoid the ball by dodging and jumping.

4. *Straddle Ball* is another game in which protective movements of the feet are required. The children stand in a circle astride and touching each others' feet. One child in the center of the circle tries to

throw the basket ball between the feet of some child or between two players' feet.

5. *Pass Ball.* — A game in which children in two concentric circles facing each other strive to pass balls around so rapidly to members of their own circle that they can overtake the balls moving in the opposite circle. In this game we see the development of rapid movements, and devotion to the group's interests.

6. *Bombardment.* — In this game two teams line up on opposing sides from fifteen to twenty-five feet back of the line on their own territory. Each player guards an Indian club which stands on the floor beside him. If this club is knocked down by one of the balls of the opponents, several of whom play at the same time, the player whose club is hit must replace the club before returning the ball. Points are scored by opposite sides when a club is hit or accidentally falls. In this team game we see fighting for points which are scored not as individual gains but for the group.

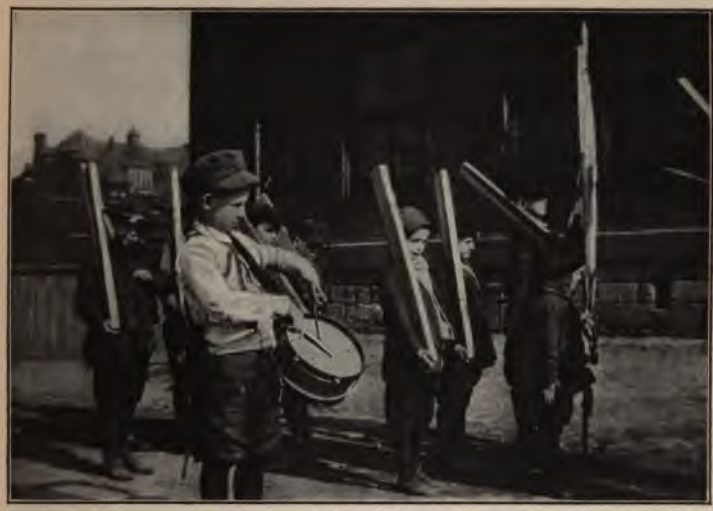
7. *Human Target.* — One child as a Human Target tries to avoid being hit by a basket ball which others are passing among themselves and throwing at him. Here we see individual fighting movements in the form of jumping and dodging.

8. *Kick Ball.* — In this game we see fighting by means of kicking movements. Both sides line up in sitting position four feet apart and fight to score points by kicking the ball over the heads of opponents. The kicking must be done with the feet while both hands are placed on the floor.

Through Manual Projects. — To train in combativeness by manual work, one must study the skills prevalent at different ages, and learn to understand the use of these skills for personal emulation as well as for group advantage. In the kindergarten there is less interest in competing for manual skill than in the grades following. Still the desire to build the best house, paint the best furniture, weave the prettiest rug, etc., can be utilized. Even in the kindergarten, children can learn the fair way to excel and can be taught to share with the group some of the results of individual gain. Through the primary grades, skill is acquired more and more through competing with others. School gardens, school fairs, spelling bees, and grammatical contests can be so socialized that the group always shares a little in the personal advantage of some of its members. Children cannot learn too early that all do not start even in the race for honors and that the rules of fair play demand sharing with the group.

Records of Fighting Plays

1. **Soldiers. Lawrence Park.** — Seven soldiers march away, waving flags to the beat of a drum; behind them trails an express wagon containing a load of brooms to be used for guns. Some little girls playing house step out and wave good-bye to the soldiers. The soldiers hold a hurried consultation and decide upon a place for their camp. Two boys bring a screen to the spot selected and, using it for sides, erect a tent. Then they build a fire and get ready for bed. The play leader suggests the need of a



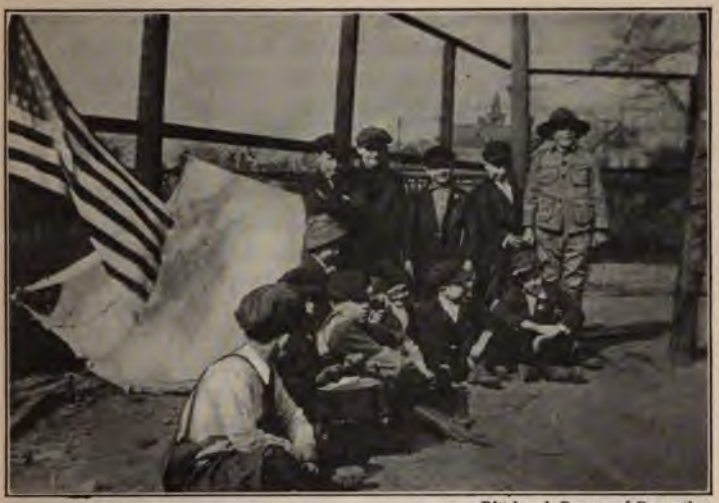
SOLDIERS

sentinel. A seven-year-old boy volunteers to play the part. He walks up and down, swinging a club as he walks. A new child stands near watching the play. "What are you doing around here?" asks the sentinel shaking his stick at the new child. (The play leader makes a movement as if to interrupt but checks it and stands thinking.) Then the sentinel goes into a girls' playhouse near by and threatens the children there. Morning comes and the watchman blows his bugle. All the soldiers scramble to their feet, wash their faces, and grab their guns. Following a boy who seems to have some plan of action, the children leave their camp and dash madly into the adjoining locker room. "Here they are!" shouts the leader, as he shakes the locker doors. "Break in!"

All rattle the doors. One boy lies down and points a broom at an imaginary enemy, while the others shout "Bang! Bang!" as they shake the doors. "All killed!" says the leader, whereupon the other children seem satisfied and run back to the camp. They take up the tent and go back to the house where the girls live. All eat an imaginary dinner.

The children dramatizing this play were six or seven years old. The elements in the plot are so characteristic that they alone reveal to careful observers the psychological ages of the children. What interested the children primarily was movement and simple imitative-dramatic play — shooting, building a camp, and imitating overt acts of soldiers. Shooting occurs first because it is the most striking thing soldiers do. The children had evidently seen pictures of camps, for they knew how to dramatize the simple essentials of camp life. In all the dramatization we see that activity is pleasurable as an end in itself, while noise as the result of activity gives spontaneous pleasure. Rattling doors and shouting "Bang! Bang!" are a source of original satisfaction. While the fighting and hunting responses are used, and the instinct of habitation is noticeable, the dramatic responses are the center and core of the game. Another point of interest in the analysis of this play is the threatening attitude displayed on the part of the sentinel. It is quite evident that a surly policeman was his copy. The fact that he had never been to the playroom before accounts for the play leader's non-interference on the first day.

2. A Soldier Camp. Andrews School Playground. — The children became so much interested in soldier plays that they wanted a tent. They planned how one could be made and selected three stakes. The play leader provided some unbleached muslin; this the children attached to an upright pole and fastened down with stakes. Then they put a flag on top of the tent and stacked some brooms out-



Pittsburgh Bureau of Recreation

SOLDIERS' CAMP

side for guns. The girls put up a clothesline and hung some washing on it. Outside the tent they built a fire, making a tripod with sand shovels and hanging a pail on it. Then they set the table, using twigs for knives, forks, and spoons, and sand molds for dishes. The boys formed a company, selected their captain, and drilled. The girls prepared the meals and served the soldiers.

This play was repeated intermittently for several weeks, and shows the type of dramatic fighting play characteristic of children from seven to nine years old. While a child of kindergarten age plays soldier largely for the joy involved in the overt activity, such as the beating of drums, the waving of flags, and the gay tramping march, children in the first primary grades need to construct more varied plots. There must be something for soldiers to do besides shoot and march, somewhere for them to go, other soldiers to

fight, and a camp equipped for outdoor life. On this account formal games such as "Soldier Boy, Soldier Boy, Where Are You Going?" which appeal to kindergarten children because of the activity involved, fail to interest older children. They need to build plots full of details and variety. Play 2 is an illustration of spontaneously constructed plays of this sort.

One other fact deserves mention. Note the rôles played by the girls. I think their lack of active participation in the rôles of soldiers is accounted for by the fact that the boys naturally took it for granted girls *couldn't* be soldiers, rather than that the girls preferred minor rôles. Environment has had a great influence in depriving girls of legitimate play experiences.

3. War. Washington Park Playground. — For a period of several years the author observed the spontaneous play of a particular group of boys of many nationalities. These boys were between seven and ten years of age, full of life, and with a strong tendency to combat. There were days when they would display a restlessness and combativeness toward other children that made it hazardous for other children to play peacefully near by. This group of boys would rove about the playroom annoying other children and seeking a destructive outlet for their activities. One day when the restlessness was worse than usual, the play leader suggested that the boys choose sides for a battle. This was done with great alacrity, natural leaders springing up on both sides. One leader said his side was British; the other shouted, "We're Americans." The Americans built a fort by bracing a gymnasium mattress against a swing frame; the British camped in the open just opposite. The captains of both sides drilled their men, but then seemed at a loss what to do. At last the American commander

said, "Let's fight!" "What will you fight for?" asked the play leader. He looked puzzled for a while, then replied, "They've stole some of our land and we want the money." The play leader thought a minute. She saw the plot was on a low level, yet determined to use it to get material out of which to develop a better plot. "All right!" she answered. "Hadn't you better go over there and ask them for the money, so they will know what they are fighting for?" The American commander went over and made his demand, which was refused by the British. It was plain that both sides wanted war. Again both sides lined up their men, the British standing behind a row of chairs. "Forward, march!" said the American commander. The soldiers shouldered brooms and marched several times around the room to the beat of the drum. When the third round was made a spontaneous battle took place in which both sides rushed pell mell at each other, shouting "Bang! Bang!" and pushing each other down in great confusion. This lasted only a minute or two and soon the play leader heard shouts of, "I pushed him down and he won't stay there!" or "Never touched me!" Then the boys turned to her as the final court of appeal. She helped to eliminate the unfair pushing by suggesting that every man fall as soon as the broom touched him. She also helped to reconstruct the plot, and two or three days later substituted an historic plot. An interesting result was that these unmanageable boys learned to utilize the combative instinct for group purposes. The pushing, crowding, and wrestling movements were not eliminated, but were governed

by rules. Some direct fighting was permitted, but it was carefully supervised, and the children themselves were trained to judge and to act as umpires. The result was that other children played unmolested near by. For a period of several months the boys continued to develop interest and good habits through the use of fighting plays.

The first thought occurring to one in examining this record is the low type of intelligence which prevailed in the boys' social adjustments. One would be interested to know as a result of tests whether this was the result of poor native ability or of the immigrants' condition of life in a crowded city. To the writer the play leader's suggestion that the children invent an end to fight for was unnecessary. The direct output of energy was the children's immediate interest; the imposition of an end by the teacher was premature. Later plots constructed by the children after conscious deliberation, showed a commendable growth in the group's conception of fair play, in loyalty to group ends, and in a willingness to refrain from unfair advantage.

4. **Soldiers and Indians. Washington Park Playground.** — The boys chose sides — Americans and Indians. The Americans had their fort behind a bench on one side of the room; the Indians camped on the other side. The American captain drilled and marched his troops. The Indian chief led a war dance, then crouched down, put his hand to his forehead, and searched for the enemy. When he saw the enemy he gave a loud war-whoop. All the braves rallied to him and crept stealthily toward the American camp. When near, the Indians fired imaginary guns, shouting "Bang! Bang!" The fighting became so rough that the play was stopped by the play leader.

This is an example of the need of constructive suggestion to convert the play into right channels of expression.

5. **Indians and Cowboys. Arsenal Park.** — One day after school, two boys, one in a cowboy suit and another in an Indian suit, came into the playroom. Both boys strolled listlessly around the room, their eyes resting nowhere for more than a moment. Plainly there was nothing in sight which appealed to them. At length the Indian said, "Let's get guns!" Both boys seized toy brooms and started to shoot with them. The cowboy called another boy to him and the two hovered near a screened gas fire, pointing the guns toward the blaze and shouting "Bang! Bang!" The Indian found another boy to play with and crouched behind a table. Soon the Indians attacked the cowboys. When asked by the play leader why they were fighting, the Indian chief said, "For a horse." Then he added, "You be our horse." The play leader consented. The Indians tied her to a table. Soon the cowboys came over to get the horse and in the ensuing battle the play became rough. The play leader took away the brooms and stopped the game. The Indian said, "Let's go home; she won't let us have the guns!" Then he drew off the cowboy and both sulked for a while. The play leader rallied the other children and together they played cowboy. But the play lacked vitality. It did accomplish a purpose, however; it showed the boys the necessity of fair play. They watched furtively and with interest. Finally the Indian and cowboy played chase, hiding behind chairs and sliding down the slide.

Again we see a play on a very low social and intellectual plane. It is included as an illustration of the part the fighting instinct plays in causing restlessness. Evidently these boys appeared in the

playroom after a day in school in which many normal instincts toward activity had been thwarted. Many children are unfairly blamed for fighting on their way home from school. This fighting is sometimes a natural reaction from a day of repression. A study of fighting responses shows how naturally they appear when other instincts are refused normal functioning. Unfortunately the playground cannot handle such cases alone. Until the school, also, learns to handle the instincts properly, much of the playground training is only palliative.

6. Battles of the French and Indian War. Mt. Washington Playground.[1]

a. *Braddock's Defeat.* — "Indians under Big Chief Pratt hide behind trees. English, all armed with brooms, parade out in stiff military fashion, and stubbornly maintain their ground, while the firing, which begins immediately, goes on. Almost all of the English fall to the ground, either dead or wounded. Two soldiers half carry, half drag the dying commander from the scene of battle. In the barracks the general revives and then the roll call is taken. A volunteer consents to go out immediately to spy on the enemy, which is still in the vicinity. A cry of fire is raised at this instant. Great confusion. One group fights the fire; the other group attacks the Indians and the French who have committed the outrage. More killing; some captures. (All the soldiers and the Indians in the play have nine lives.) A lull in hostilities ensues while efforts are made to arrange for a peaceful council. English messenger is attacked in Indian camp and his scalp (a piece of swamp grass on a stick) thrown into British camp. Fighting is renewed with increased intensity. British have now learned the Indian

[1] Described by Miss Sophia M. Lewis.

method of fighting and use the same. Fighting continues until both sides are exhausted.

b. *Fall of Quebec.* — A lumber pile represents the Heights and its surface the Plains of Abraham. French and Indians lie sleeping on the Plains. Sentinel, on guard, walks back and forth. (Indians in this game use guns.) British creep up under cover of darkness in the snow, through the trackless forests. Guard is surprised and killed. The Heights are scaled and the fight commences. The battle, which lasts a long time, is followed by negotiations of interesting character."

This play, though historically inaccurate in some details, represents an interesting combination of the dramatic and combative instincts. Miss Lewis states in her notes that the boy who played the part of commander-in-chief had been one of the hardest on the playground to manage; that after the fighting games began he became a helper instead of a menace to the group.

7. A Snow Battle. Washington Park. — A heavy snow brought to the boys' minds the idea of having a snow fight. All hastened to put on caps and coats and ran quickly out-of-doors to the spot where the snow was deepest. A fort was speedily built; sides were chosen and arrayed against each other; then the battle was begun amidst wild shouts of glee. Vigorous hand-to-hand conflict resulted in clouds of flying snow. It was soon evident that the demolished fort had been captured by the invaders, who immediately led a triumphant march about the field of battle.

Snow fights afford splendid opportunities for the training of the combative instinct, along with training in manipulation of plastic material. Such plays may include team wrestling, pushing, and

throwing, all under strict rules enforced by group leaders. Tumbling about in soft snow is much enjoyed by children, as is the making of snowballs and forts.

8. Fighting Play.[1]—"A most interesting house-play of a boy six years old. This child for several days had been observed closely by the play leader. He seemed abnormal in his conduct. He would often rush wildly about the playground with a big stick for a gun, shooting everyone he met and punching the other children. One day, however, he found some loose boards, stood them up to form a sort of wigwam, and announced that he had built himself a house. He furnished it in the crudest manner possible, using large stones for furniture. After a while he went over to a spot where some other children were keeping a store, bought some provisions, and took them to his home. He stayed there a few minutes until the playground closed.

This was the first time the child had shown any interest in anything except rushing about, knocking others down, and shooting. A few days later, while shooting someone, he was evidently attracted by some handwork the children were doing, for he got a piece of paper and made a wigwam, calling it an Eskimo house. After a while he discovered a habitation — a place — where some boards projected from a little bank of sand. He crawled under this shelter, saying that he was an Eskimo and that this was his home. When next observed he had placed boards on the ground and had enclosed his home with a roof and sides. A large stone was the table and smaller

[1] Described by Helene Reed.

round stones served as food. Little dishes filled with sand stood in a row along the front of his house. He himself sat contentedly inside, talking to everyone who came along and shooting at anyone who molested him. He said, "I'm the father; that fellow is my mother. He brings the pies from the store." This play continued for some little time, the father doing the ordering, the mother baking the cakes in the store and bringing them home. After a while it was noticed that both boys sat in the house. On being questioned the father said, "The mother's shot" (pointing to a child who had previously been the mother). "He's my fellow; he's the fellow that shot the guy that shot my mother. We're *brave*, we're awful brave." In a few minutes he left another boy in charge of his house; it was a hospital now, and he started out again to fight.

In this play one is struck at once with evidences of a low type of intelligence; pleasure in mere manipulating of household furnishings, enjoyment of mere pushing unrelated to purposive play, quiescence in dramatizing a rôle — all these indicate arrested development in boys of this age. It would be interesting to know the intelligence quotient of these boys who, surrounded by a wholesome play environment, yet choose to sit under cover and live out a drama of this low order. The murder depicted orally shows again immature judgment acting upon chance experience.

CHAPTER IX

Playing Hospital and Funeral

Many Traditional Games Represent Death and Burial. — In the childhood of the race we find many traditional games originating in funeral services or in magic rites performed for the healing of the sick and wounded; such games are *Green Grass*, *Green Gravel*, *Jenny Jones*, *Old Roger*, *Wallflower*, and *Booman*. Many folk dances, also, represent in dance pantomime moods of grief and sorrow; such is *Lot is Tod*. Children play these games without a knowledge of their content. After the meaning has been lost the words are repeated as nonsense jingles, and the games are enjoyed because they abound in movement, rhythm, and repetition; and because they usually appeal to the social instincts.

The Child Does not Dramatize Grief and Sorrow but the Situations in Which They Occur. — Children show the same primitive tendency to incorporate in dramatic play experiences representing joy or sorrow as does primitive man. They do not repeat the experience in play for the purpose of intensifying a mood of joy or sorrow, as adults sometimes do when they relive such experiences in memory or when they record events in works of art. Children's joys and sorrows are short-lived and their dramatic enactments of adult grief and sorrow are a representation not of the emotions of adults, but of the striking features in the situations which call forth the display of emotions.

Why Such Plays Appeal to the Child. — There is scarcely a household that is untouched by the ravages of sickness and death; scarcely a child that does not reproduce such experiences in play. If this seems strange to the adult it is because he does not put himself in the child's place, and recall the mystery and awe with which in his own childhood he contemplated the slowly moving funeral procession; the strange majesty of the bowed people veiled in black, the busy coming and going of folk to the homes; the crape, the flowers, the music, and numerous other interesting sights and sounds which attend the last rites of the dead. Similar to a child's fondness for playing funeral is his desire to ride in the patrol wagon. A child in the Pittsburgh playgrounds once remarked, "When I get big, I'm going to ride in the patrol wagon; my father has gone in it twice."

The Child's Attitude toward Sickness and Death Different from the Adult's. — A young training-school critic once visited a kindergarten where some practice students were anxiously awaiting her help. One of these students tried vainly to interest some four-year-old children in the Third Gift building lesson, but to no avail; in desperation she gave the children some penny dolls with which to play. One little girl said her doll had died and should be buried. From that moment the children became interested and the play took care of itself. The young teacher entered spontaneously into the game and several funerals and burials were dramatized with great interest. The young critic teacher was horrified to see an example of a "negative" play. She did not seem to see the

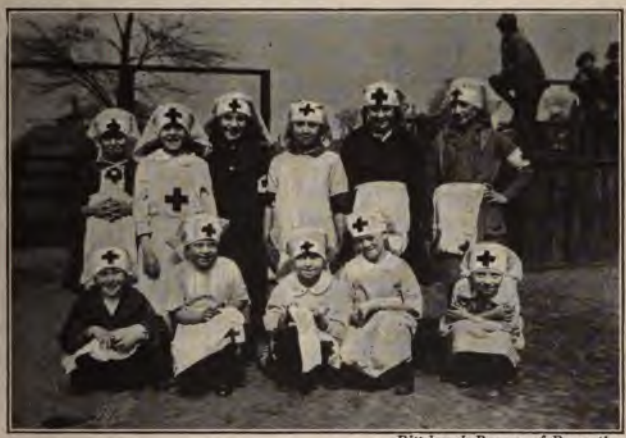
matter-of-fact way with which the children reproduced the common occurrence of death; nor did she recognize that their attitude toward sickness and death was different from the adult's attitude. To her, death was associated with grief and the breaking of ties, and to play a game about it was sacrilegious.

Pittsburgh Bureau of Recreation

PLAYING HOSPITAL

Educational Possibilities in Playing Hospital and Funeral. — Dramatizing sickness and death is neither more nor less important than the enactment of any other human experience. It affords an opportunity for a glimpse of the fleeting panorama of human life. It calls into play the instincts of emulation, coöperation, and kindliness. It is easy for the play leader to explain facts of hygiene in connection with hospital plays. The children delight to dramatize "first aid." In preparing bandages and dressing wounds they can easily learn the first elements of hygiene. Hospital

work affords endless opportunities to perform interesting acts. There are meals to serve, beds to make, patients to care for, and operations to perform; in the performance of all these tasks one may display personal qualities which win social approval.



Pittsburgh Bureau of Recreation

RED CROSS WORKERS

RECORDS OF HOSPITAL AND FUNERAL PLAYS

1. Dr. Smith's Hospital. Lawrence Park Playroom. — Dr. Smith sat at a long table rolling tissue-paper bandages. By his side was his medicine closet, containing several cups filled with water. The play began when Dr. Smith announced he had no babies to care for. Some little girls who were giving their dolls a tea party jumped up and made preparations to visit the hospital. One girl brought her doll over in a go-cart. Dr. Smith looked at the doll,

then carried it behind the screen which marked off the hospital and handed the doll to the *vaccinating doctor*. This doctor pushed up the doll's sleeve and found a round pencil mark which he said was yesterday's vaccination. Dr. Smith supervised the putting on of a new bandage, then returned to his work cutting bandages and rolling them up. Soon another doll appeared and was said by Dr. Smith to have its arm hurt. He took it out to the ward and laid it carefully on the mattress. "Now I want a nurse," he said. Straightway a girl of nine years appeared. Dr. Smith looked her over, then said abruptly, "Get a cap!" She disappeared and came back wearing a tissue-paper cap and apron. "Stay in the ward!" said Dr. Smith. She went back of the screen and bent over the sleeping doll, covering it with a small blanket. Another doll appeared. "Croup!" said Dr. Smith, and ordered the doll to be put into the white iron bed. Presently two mothers came to inquire about one of the babies. Dr. Smith waved his hand and said, "Show them the one with the lace on its dress." The vaccinating doctor came into the office and announced, "Two babies are dead." This remark occasioned no surprise or regret to either doctor. Shortly afterward Dr. Smith called to the play leader and said, "I want a knife to operate with." Just then another doll appeared. "Typhoid!" said Dr. Smith, as he handed her to the nurse. "Measles!" he said to the mother who had just brought in another baby. These dolls were put in separate beds and their mothers told to come back at two o'clock. Two other mothers were also sent home to await that hour.

"We need an ambulance," said Dr. Smith, and a boy with an express wagon was called into service. The boy clanged an imaginary bell, shouting "Ding! Ding!", and dashed from house to house until he finally persuaded a mother to send her child to the hospital. The vaccinating doctor had wandered out to watch some boys at play. He was called back sharply by Dr. Smith, who said, "Come on! You ain't got no time to watch that!" The piano signalled it was time to put the toys away. "Oh!" said the nurse with regret. "I'll use these rolls tomorrow," said Dr. Smith, putting the bandages in the box. "And I'll be the nurse," said the little girl.

The spirit and zest with which this play was conducted reveal the real character of dramatic play. These children played with the same singleness of aim and sincerity of purpose that characterize the work of the adult doctor and nurse. Dr. Smith's attitude became solicitous, his bearing important, and his manner to the nurses curt and authoritative.

2. **Hospital. Washington Park Playroom.** — The hospital consisted of a row of beds made from large wooden blocks. A doll covered with a white paper sheet lay in each bed. A head nurse and two assistants bent over the dolls, feeling their pulses and tucking the clothes closer around the dolls. A special chair by the beds was reserved for the doctor, who presently appeared to examine the dolls. With nothing but a gesture of "All's well," the doctor left.

3. **War and Hospital. Ormsby Park Playroom.** — A war had taken place between Indians and cowboys. Six-year-old B, a favorite among the children, played he was hurt. He lay very still on the floor, the

cowboy suit and red bandanna handkerchief he wore adding to the picturesqueness of the part he was playing. "We need a hospital," said one child. Quickly the other children arranged two tables to represent a hospital ward, then bent over B. He stiffened and let them carry him to a table, where he lay very quietly, without once opening his eyes. A self-installed nurse folded a tissue-paper bandage and pinned it around his forehead. Still B did not stir. "Time for your medicine," said the nurse, as she lifted his head gently and poured two teaspoonfuls of water down his throat. At this B slightly opened his eyes, then closed them again. The other children had resumed the war game, so the nurse and B were alone, except for one boy who now made his appearance carrying a doctor's satchel. He felt the patient's pulse, looked at his tongue, then ordered him up. The nurse helped B into a chair and brought him a broom for a crutch. B put it under one arm and hobbled off to the scene of war, where he soon forgot all about being sick and joined the cowboys fighting the Indians.

This play was most interesting to watch. It was quite evident that the make-believe sympathy of the nurse and the attention of other children were the objects B sought in playing the part. When the writer visited the playroom after an interval of a week B was still playing this rôle.

4. **Hospital Play.** — Some children who were thrown together for a few days in a detention home became much interested in playing hospital. The following verbal descriptions were given by various children. "We take the babies down to the hospital,

take the tonsils out, vaccinate, feel her hands, and feel her heart. On another baby, put vaccination on her foot. When they got headache we put cloth on their head; when they got earache we should put a hot water bag on it. Doctor comes in and feels baby's hands and heart and opens her mouth and gives her some medicine. We need keys (real ones) to open the bathroom doors. When another baby comes, put it in stretcher and give it a bath. When their eyes hurt, put something like water in it. If their foot hurts, put white stuff and a rag on it. Put glass thing under their tongues. When they ain't got no arm put new arm on it. Ambulance goes to house if they got a baby sick and bring it to hospital. Take it to bed on stretcher. When we (nurses) go home we go on car, and lady sets the table and lady gives us good things to eat — coffee, oranges, apples, cake. Can't all go at once — only one by one so some one can take care of the babies. When the babies want something to eat they got to ring bell by bed. We clean the babies up."

Here we see the crude content of children's minds.

5. **Cemetery. A Home Play.** — A small boy bent eagerly over his task of arranging rows of sticks in the soft sand; when asked what he was doing, the boy looked up with a smile and answered, "Oh! making graves in a cemetery."

6. **A Kitten's Funeral. Sullivan Playground.** — One day a kitten was killed on the playground by a stray dog. The children said the kitten should be buried. At once some of them began to dig a grave

while others gathered around the dead body to guard it. A few children showed evidence of grief, but most of them were absorbed in the ceremony of burial. They buried the kitten and covered the grave with roses. A stone was selected and placed at the head of the grave. When the play leader went home that night two negro boys volunteered to watch the grave until supper time.

7. **Funeral. Soho Playground.** — Two dead birds were found on the playground. The boys buried them and put tombstones on the graves. They also made a fence around both graves.

CHAPTER X

Playing Fireman

Why Children Play Fireman. — Probably no single rôle is so frequently dramatized among groups of young children as that of fireman. Spontaneous attention naturally goes out to intense stimuli such as loud noises coming in the midst of quiet, to that which is unusual and novel in its appeal, to moving objects, and the like. Just as the tramping of soldiers' feet and the parade of the town band entice children into the street, so the fire-engine dashing by, clanging its bells and sounding its shrill whistle, stirs up interest in dramatizing that event. "Let's play fire!" is the cry. The boy or girl of four years becomes the ringing bell, the prancing steed, the courageous fireman *all in one.* To the child of five or six years of age the plot unfolds larger possibilities and demands a differentiation of parts. "I'm the bell," shouts one child. "I'm the hook and ladder," declares another. The child having the clearest vision becomes the leader and assigns the parts. If his observations have been good and his interest in details keen, he becomes "chief" and organizes a fire department; selects horses or motor trucks and firemen to man them; decides where the fire is to be and directs putting it out. Often his images are not clear, his knowledge not complete, then other children help him out in constructing the plot and dramatizing it.

Records of Fireman Play

1. **A Three-Year-Old Child's Fire-Plays.**[1]—R began to play fire-engine shortly after moving to a neighborhood where a large fire department was located. Because his fire-plays throw some interesting light on the psychology of play, the enactment of a series of fire dramas is presented in this chapter. The first plays consisted of swiftly moving flights in an express wagon. "Fire! Fire! Ding! Dong!" shouted the fireman as he sped along. This simple interest in movement soon gave way to a more varied plot. The front door steps were pressed into service as a burning house, a long board became the hook and ladder for rapid ascent into the realms above, a coiled rope served as hose, and imaginary sprinkling of the burning house gave rise to imitative sounds such as "Cz! Cz!" The active features of the play, rapid movement in a wheeled vehicle, climbing and manipulating such objects as hose and ladders, was the center of interest for some time. Fire-plays occupied at least two hours of this boy's time every day during that fall, and when the winter months made indoor play more prolonged, the center of interest shifted from activity in a wheeled vehicle to activity on all fours as the boy pushed a toy fire-engine about. The use of this fire-engine, a present to R on his fourth birthday, affords some striking examples of growth in mental imagery. For several days he was content to push about this attractive fire-engine drawn by three prancing steeds. The automatic clanging of

[1] Records from mother's notes.

the bell, the race to the fire on all fours, satisfied temporarily the boy's desire for activity, while interest in the mechanism of the new toy for the time being stifled the creative play he had been wont to engage in out-of-doors. Soon, however, houses appeared, built of blocks; long pillar-shaped blocks served as hose; while wooden rings represented coils of rope. Other blocks served as firemen who manipulated the new equipment. The boy would look carefully through his cupboards of toys, selecting new equipment suitable for use in putting out fires. He would sometimes play for an hour with the toy, piling the truck full of objects representing pails, ladders, and the like; for each time the department passed the house he observed new objects in its equipment, while one big fire in the neighborhood revealed the uses to which the equipment could be put. Then this creation of his imagination was abandoned for a new fire toy constructed out of blocks from all the plastic materials he could lay hands upon. The properties of the new fire department were much more numerous. True, the new motor truck could not be moved about, the horn did not blow, and the driver was less realistically garbed; but the life it portrayed was more real, for it was the creation of the boy's imagination. He himself blew the horn, moved the wooden firemen here and there, coiled and uncoiled hose, and rescued people from the burning houses. His mind planned the fires, his voice sounded the whistle, his hands put out the fire. The mental imagery thus initiated was more satisfying than the physical activity he had used in operating the gilded toy.

2. **Fireman. Andrews School Playground.** — A large fire near the school suggested this play. Some boys built a house of blocks. One boy said, "Let's have a fire!" Two other boys produced a wagon filled with buckets of water; this was the hosecart. The boys in the house rang a bell and the firemen and hosecart came rushing to the burning house. The firemen knocked down the house while pouring water on it. The next day the play was repeated. A small boy built a stable near the house and placed a block inside to represent a horse. Although the firemen arrived very quickly the horse had burned and had to be buried.

3. **Fireman. Lawrence Park Playroom.** — A corner of the room was screened off for the engine house. Blocks indicated the horses' stalls. Two children were harnessed in rope and stood awaiting the call. A fireman wearing a cap stood with a bell in his hand ready to ring it the minute an alarm of fire came in. At last some one shouted, "Fire! Fire!" The fireman rang the bell long and loudly while two other boys took out the horses and dashed wildly off to the fire, followed by another fireman pulling an express wagon. As if by common consent all rushed to the furnace room, where the gas fire was burning brightly. One fireman jumped over the railing and climbed a few steps up a ladder, which happened to be against the wall. He then pointed an imaginary hose at the top of the boiler, saying, "Sz, Sz!" Next he ran down the ladder and called for an ax, which was handed to him by the fireman in the hosecart. The other fireman ran over to the furnace door and played he was

pouring a stream of water through the crack, where the fire was seen to be burning brightly. "Get my ax from under the seat," he cried excitedly. As an imaginary ax was handed him, he chopped vigorously at the wall. After this the fire was considered to be put out, and the firemen went home. In a few minutes the same children played it all over again. This time after the fire was put out one of the firemen went to his house and slept. He got up, drank a cup of water, and returned to the engine house. Here he harnessed his horse and dashed around the room two or three times. When he came back he said, "See the new shoes I got him."

As interest in this play grew, all the girls and boys in the playroom became a part of it. The plot increased in complexity from day to day as different children suggested new ideas. More stalls were made, ropes were coiled to represent hose; the firemen slept when not called out; a policeman walked up and down near by and gave the alarm. It became necessary to make the house-play a permanent part of each fire in order that the fire department could control the time and place of each fire. So some of the family agreed to go to bed and let a policeman discover a fire in their dwelling. This policeman broke the door, aroused the sleepers, and gave out the alarm. The firemen jumped out of their beds and the horses began to prance and were quickly harnessed to an express wagon into which a fireman threw a coil of rope. The remaining firemen followed in the hose-cart, one of them clanging a bell. The members of the family stood in the second story of their house and

were rescued by a brave fireman who threw them ropes from which to slide to the ground below. The other firemen poured water on the house. One fireman was hurt and had to be taken to a hospital managed by some girls. Then the firemen and hose-cart returned home and prepared for another fire.

This play lasted for two weeks. It is interesting to see how natural it was to select a real fire as the scene of the conflagration. And when this place was given up in favor of a site where a family lived, how realistically other details were worked out! The steps of the slide became the second story of a house and real rope was used as hose. A bell and whistle also added greatly to the reality of the play. All these points are of significance to one who watches the development of the plot.

4. **Fire and Hospital. Andrew School Playground.** — A large number of children who were playing ring games wanted to play fire. One group used the circle of playmates to represent a house. Another group did likewise. Someone suggested having some people sleep in each house, so the two children who had claimed the houses selected families. One boy wanted to be a policeman. The members of each family lay down to sleep and then the policeman shouted, "Fire! Fire!" In the meantime, several firemen had found children who were willing to be fire horses and had harnessed them up in ropes. The fireman now drove to the two houses and worked vigorously to put out the fires. One member of a family was hurt in making his escape from the burning house and was rushed off to a hospital. Here his leg was pronounced broken.

It is quite evident that these children were accustomed to the kindergarten gesture plays; in perfectly spontaneous play, a ring is not usually suggested to represent a house.

CHAPTER XI

Playing Animals

Children Imitate the Movements and Characteristics of Animals. — The world is full of the wonder of things to a growing boy or girl. Butterflies, bees, caterpillars, birds, frogs, fish, horses, cows, sheep, and chickens are a child's natural playmates. He feels a kinship with these living things, not because he possesses by instinct a presentiment of the common source of life, but because living, moving things challenge his attention; worms crawl across his path; squirrels scamper away at his approach; ants build their homes under his feet; birds twitter above his head; butterflies challenge him to a chase. While he can neither fly like a bird nor swim like a fish, the child's imagination soars aloft with the swallow poised on high and penetrates again to the haunts where the darting minnow lives. "I'm a bird!" he cries, as he skims over the ground with outstretched arms, flying now fast, now slowly; hovering near the leafy trees, hopping in the green grass; in fact, reliving and reinterpreting the great panorama of life spread out before his searching eyes.

What Children Copy. — What children copy in their dramatic representation of animals is directly related to what interests them and claims their attention. And since the child's attention varies with age, sex, and experience, his play is never the same. There are, however, certain significant things about a child's

capacity for attention which apply to his manner of playing animals, and certain changes can with a fair degree of certainty be predicted to occur with age and experience. Little children notice animals because of their motion and their novel and unexpected behavior. The sharp, quick contrasts in their movements, some in water and some on land, call forth interest and attention. A fly buzzing by, horses prancing and running, birds flying, — all these challenge the attention. And in all imitative-dramatic play these striking or characteristic acts of animals are seized upon and copied; dogs bark at cats; lions stalk and roar; tigers crouch and spring; and so on through the cycle of actions portraying the behavior of animals.

After children have become acquainted with animal life through watching the movements and behavior of animals, their attention spreads out to embrace the series of acts which are characteristic of each creature in its particular environment. How a bird lives, what it eats, how it gets its food, where it finds it, are points of contact which develop naturally from excursions. Kindergarten games are made up of simple contrasts of the events in bird and animal life. Birds fly and hop, eat, bathe, lay eggs, and rear their young. House dogs bark at cats and strangers, bury bones, and beg for food. Caterpillars crawl and spin, rest in cocoons, then emerge as butterflies. Ponies prance and gallop, are rubbed down, fed, and put in barns for the night. Lambs graze and gambol. Circus horses dance and race and perform various tricks.

Why Some Kindergarten Games Violate the Mind's Laws of Attention. — Many of the traditional kindergarten songs and games violate the principles of attention as exemplified in the child's interest in motion and change and his continuance of attention to one subject. These games are so constructed that they represent dull, monotonous behavior of animals with few contrasts in movement and are continued to the point where interest dwindles entirely away. Children of kindergarten age are not interested in learning "*all*" about birds, or squirrels, or horses. They approach these creatures from the standpoint of expression; squirrels run briskly and hunt nuts; birds fly, hop, and dig for worms or insects. In helping children to understand animals, kindergartners have never emphasized structure at the expense of function as some primary schools have shown a tendency to do. Holding true to the expression type of play, the kindergarten has emphasized the *function* of animals; it has shown what these creatures do as they come in contact with the world. It has, however, as has just been indicated, built up plays and games revealing a whole cycle of animal behavior, forgetful of the fact that an adult can hold in the focus of attention a whole series of thoughts, but that a child centers his attention on one characteristic of that object. The kindergarten game, song, or rhythm should be short, and reveal only sharp contrasts in movements and acts. With age and development of thinking capacity, relationships in thought are built up. Even before the kindergarten period has passed, however, some games can be constructed which contain a series

Pittsburgh Bureau of Recreation

PLAY ANIMALS

of acts arranged in a certain perspective around some point of dominant interest.

Appreciation of the Value of Life. — Having approached animal life from the standpoint of expression, the child readily takes the step to the why, what, and how. Children see animal behavior in relation to their own social contacts and only gradually come to understand the kinship of all living things through observing their mutual dependence and their individual functions. Only when children see the usefulness of each creature will they learn to respect its life and pursue it with eyes and camera rather than with destroying hands. We expect too much from children when we think they see themselves as a part of one great living universe. It requires years to build up this conception.

Ethical Training Through Play With Animals.— The ethical values arising from contact with animals develop along with the appreciational values. Kindliness may be developed and brutality restrained. In playing with animals, as well as in dramatic representation of their habits and activities, children display native kindliness, sympathy, or cruelty. Just as with most of us kindliness predominates over cruelty, so in children's relationships with animals we see kind actions imitated most frequently in childish play. On the whole, animals are petted and indulged by children. However, there are times when children lack sympathy and kindliness because for the time being other instincts are stronger. For example, boys tie tin cans to a stray dog's tail in order to indulge in merriment. For the time being, the excitement and

fun so fill their minds that their imaginations remain inactive; they fail to put themselves in the place of the creature they are tormenting. Children often kill birds and small moving creatures unthinkingly because the impulse to throw operates, before imagination pictures the physical distress of the life to be destroyed. The boys described in the playground record as chasing and killing a chicken which they found scratching up their garden were acting upon the impulse operating most strongly at the time (p. 162).

It is within the possibilities of supervised play to build up right habits of sympathy and kindliness by working for appreciation through observation and the care of pets. For example, as soon as children learn what ants do for us they are eager to protect the tiny creatures. The following illustration of training in sympathy is taken from the writer's records. One day a mother and child spied a young robin panting in a hedge near their home. The mother robin hovered near, protecting her young by threatening and warning cries. The boy and his mother decided to leave the robins alone for a time, thinking the young robin might recover enough to fly back to the tree. The mother supposed her child was looking at some books. Presently he appeared, saying excitedly, "The robin is dead! A giant came into the yard and killed him! No! a bad boy did it." A visit to the hedge revealed two of the boy's Indian clubs lying in close proximity to the dead robin. Without comment the mother went back into the house with her four-and-a-half-year-old boy. Presently she said, "I should be so happy to know what really happened

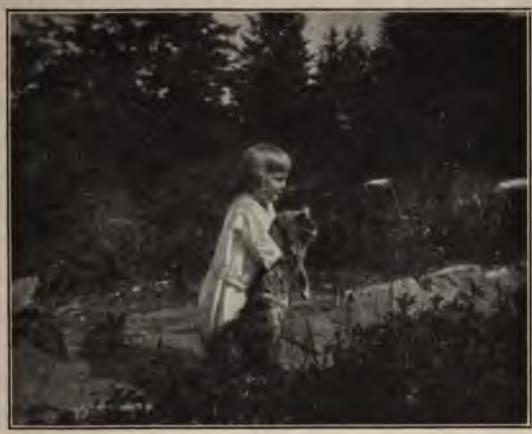
to the robin." Feeling her sympathy, the boy exclaimed enthusiastically, "I hit the robin with my Indian club! I petted him. The first club rolled away so I threw another!" Realizing that the throwing propensity had been the strongest impulse operating, the mother set to work to build up sympathy through imagination. She pictured the poor mother robin looking for her young bird and finding it dead. She took her boy to the door where they listened to the call of the mother robin. Then the boy's mother talked about the useful work robins do and spoke of their charming songs. Because contact with birds was likely to recur again and again in the

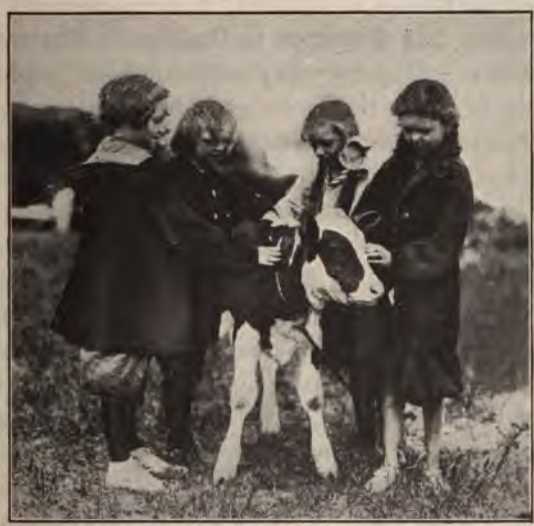
LEARNING THROUGH OBSERVATION

boy's life, the mother decided to associate punishment with the boy's first act of cruelty to birds. The boy was sent upstairs after lunch to remain until his supper time, "lest other young robins should be harmed." When the boy came down stairs to supper he said, "The poor mother robin is looking for her little bird!" The tones of the boy's voice were but a reflex imitation of the ones the mother had used in speaking sympathetically of the dead bird. The mother realized there was no basis for permanent sympathy between the child and birds, and set to work to build up in her child's mind an appreciation of bird life through feeding the birds in the yard and observing their habits.

Parents can take even little children to near-by parks where birds of many varieties can be seen; where squirrels will feed from the children's hands and fish sport in the fountains. Much can be accomplished in these early contacts with living things to establish by example a sympathetic approach. True, a child's first sympathetic acts are purely reflex imitation, but accompanied by training in observation, native kindliness gradually asserts itself. Both kindliness and sympathy operate in the midst of many individualistic tendencies and require parental nurturing to wax and grow strong. They are not very definite tendencies at best and are easily choked by selfish ones. To retain them and adjust them to useful purposes is an important duty of educators.

Scientific Values. — As soon as children arrive at the age when they can observe the characteristic features of an animal's habitat, its manner of securing





FRIENDS

food and rearing its young, and even its structure, "nature hikes" are of great advantage. In the Pittsburgh playgrounds these hikes were conducted by nature-study teachers and became purposeful excursions in which observation and the camera took the place of chasing, throwing, and killing. Many specimens were brought home alive to be nurtured in a park zoo. It was noticed that as soon as the children's imaginations were trained so that they could put themselves in the place of the animal studied, killing and wanton chasing occurred less frequently. The scientific value of these nature hikes lies almost entirely in the habits of mind the child forms. Mere getting acquainted with animals and pets should lead to the habit of identification and comparison with other similar animals.

Symbolism not Common in Children's Portrayal of Animal Life. — Because play is life and life is play, no separation is made in the records between plays with real animals and dramatic representations depicting their lives and habits. The records show little symbolism. Whatever premonitions of kinship with animal life occur are hidden from the eyes of even the trained observer. The last dramatic play described in the records happened to be the only dramatic representation of the home life of birds which was recorded in the program notes of thirty playgrounds for a period of four years. A perusal of the records of dramatic representations of animals reveals the preponderant part physical activity plays in animal games, and the fact that most dramatic representations of animals end in chasing games.

The Place and Significance of Constructive Activities in Connection With Dramatic Plays of Animals.— One has but to watch the spontaneous play of children to see how intimate a part constructive or manipulative activities assume in dramatic plays. Especially in plays with toy or real animals, or in impersonations of animals, we see the hands try to work out through plastic materials the images the mind supplies. Even a three-year-old devises some kind of shelter for his toy animals and pets. The records show how spontaneously children invent crude costumes and accessories to make the rôle they are enacting more realistic.

Constructive Activities Which may be Used to Assist Kindergarten Children in the Observation and Care of Animals. — For children of kindergarten age, clay, wood, cardboard, and paper are the best plastic materials to use for constructive work related to the care of domestic pets and animals. In connection with bird observation, children of kindergarten age like to make nests and eggs and birds of clay, to build bird houses of cardboard, to make feeders and fountains, and to play out dramas describing bird life. In this way they find out about the habits of birds in the neighborhood and learn to identify a few birds and to see their manner of securing food, shelter, and protection.

Animal Life. — Nearly every kindergarten is supplied with a menagerie made of cardboard or rubberoid and with a set of toy animals. The children build shelter for these animals, in this way learning a few facts about the homes of the wild animals, how they

prepare for cold weather, how domestic animals are pastured, and how domestic pets are cared for, as well as how animals are cared for in the zoo. Clay, cardboard, paper, and paint are also used in expression work to depict the habits and habitats of the birds and animals observed.

Constructive Activities Assist Children of the Primary Grades in the Observation of Animals. — As soon as children can be taken on walks or excursions by their teachers, they plan and execute many projects which assist them in the pursuit and capture of animals. The following is a list of toy models made by children from seven to ten years of age in connection with supervised hikes planned by the nature-study department of the Pittsburgh Playground Association: fish nets, polliwog nets, butterfly nets, ants' nests, aquaria, vivaria, developing cages, mounting boards, bird houses, pigeon houses, squirrel cages, bird cages, cages for white mice, dog houses, rabbit pens, traps, fishing tackle, bait cages, and box traps.

An Outline of Study Relative to the Use of Such Play Models. — In a recent publication are offered some very complete outlines for the study of animal life. The author has followed the functional point of view. For the teacher who knows how to use the suggestions in a spontaneous way the outline may be most helpful, and is for this reason referred to in this study of spontaneous play.[1]

[1] A. M. Krackowizer: *Projects in the Primary Grades*, pp. 120-154.

Records of Animal Plays

1. **Fish. Outdoor Playroom, New York City.** — A child stood on some steps and threw a rope out toward several children who were "fish swimming" on the floor. Two fish came up to bite and the fisherman tugged with all his might to pull them in. "I'm a shark," said one child as he fastened himself on to the rope; "catch me!"

Although this game was one of great physical activity, the dramatic interest was none the less keen.

2. **The Duck's Swimming Lesson. Ralston School Playground.** — A little boy brought his pet duck to the playground and put it in a tank used for water plays. He proceeded to give it a swimming lesson regardless of the fact that the duck profited nothing by the instructions, but reacted to the water in typical duck fashion.

3. **Rabbits. Junction Hollow Playground.** — A woman living just opposite the playground had a pair of rabbits in her back yard. Every day the children watched the rabbits and became more and more interested. One day the rabbits escaped from the cage. The children chased them and brought them back. Then they wanted to play rabbit. The natural thing, of course, was to construct a game telling the story of the playground rabbits. First the children were satisfied to sit up on two feet and to hop, run, and eat. Then they wanted a cage; several children made one by joining hands. This at once gave a new incentive to the rabbits, who began to try to climb out over and under the children's arms.

One of the rabbits broke through and the children forming a cage ran after it. This freed the other rabbits and a general chase ensued. Each child who caught a rabbit brought it back, and then the children discovered there was no cage. One boy said that those who made the cage ought to keep in their places, while the others chased. This worked very well. The play leader suggested that each child capturing a rabbit should take this rabbit's place in the next game, while the rabbit caught should take the place of some child who was part of the cage.

One day the play leader added zest to the game by changing the words of Rabbit In the Hollow to follow the game the children had constructed. The children made rabbit caps with long ears and played with great interest the following chasing game:

Rabbits in the yard sit and sleep;
Children in the playground nearer creep.
Little Rabbit, have a care.
Far away out there;
Quickly to your homes
You must run, run, run.

This play is an interesting example of the evolution of a game of skill. Many of our traditional games of skill were originally dramatic games which have now lost their content and meaning.

4. **Butterflies and Grasshoppers. Greenfield School Playground.** — These children played on a wide stretch of grass at the top of a hill. Here they had a chance to sit under the trees, where occasionally they observed ants and bees, butterflies and grasshoppers. One day some children began to hop like grasshoppers and to chase each other around and

around. The play leader suggested that some be butterflies and chase the grasshoppers. This idea was greeted with great delight. At first the chase was aimless. Then someone said, "Let's pair off." So each butterfly chose a grasshopper and at a given signal the butterfly flew and the grasshopper leapt toward a goal. Generally the butterflies won, because of the difficulties of locomotion in hopping; so a handicap became necessary.

This game grew in interest and was finally used at a "game-fest." Butterfly and grasshopper caps were made of colored crêpe paper and added much to the dramatic interest of the game.

5. **Reindeer. Ormsby Park Playroom.** — A reindeer, a boy of five, was running about the playroom. A little girl reached out her hand to pet him and straightway four other reindeer appeared. A boy arranged a cave out of chairs and called out, "Here, here, come and live here!" "We ain't bears, we're reindeer," replied one child. He allowed himself to be enticed into the cave, however, and lay down there. Soon he ran out and joined the other reindeer, who were grazing near by. Again the boy of the cave called, "Come on, Father Reindeer!" "We ain't Father Reindeer," said a boy of seven, "we're just reindeer." Then the reindeer began to scramble around widely and knock into some little girls who were watching them. "Let's be goats," suggested one boy; "then we can horn and butt." So all dashed madly around the room, trying to butt the little girls, who hid behind each other screaming and laughing. After the fun had subsided, the play

leader made a chalk mark across the room and suggested that the reindeer live on one side and the goats on the other. This led to a great scrambling and chasing. Whenever either ventured on the other's territory, the one getting caught had to help the other side. The sides kept about even.

Here is an example of spontaneous dramatic play. Butting and chasing were the points of the game; that dramatic interest was subservient to the use of oppositional force is indicated by, "Let's be goats, then we can horn and butt."

6. Chicken. Junction Hollow Playground. — One day the boys had worked hard to make a garden on the playground. That night a chicken got in and scratched up the seed. Some boys living near by saw the disaster and, running after the chicken, killed it. Then the woman who owned the chicken came out and scolded the boys. The next day this story was related to the play leader with great excitement. She reprimanded the boys for killing the chicken but encouraged them to watch the garden. She then set the boys to work making a fence out of sticks and a string. That day the children constructed a chicken game. One piece of ground was marked out for the garden, another for the woman's house, and still another for the boys' house. A boy became the chicken; he ran into the garden and started to scratch up the earth. This was a sign for the boys to begin their chasing, which continued until the chicken was caught. The boy who succeeded in catching the chicken became chicken, but if any boy was caught by the woman he had to help her chase the other boys.

Another example of the spontaneous development of a game of skill from a dramatic event.

7. **Birds. Ormsby Park Playground.** — The children became much interested in watching a family of young birds living just outside the playground. Every day they saw the father and mother birds feeding and caring for their young. One day the children played birds. Four of them were baby birds, while two more were mother and father. They flew around getting worms, which they dropped into the open mouths of the baby birds. Since the children had not seen the birds learn to fly, the play leader brought pictures the next day to supply this experience. After that it seemed natural and easy to introduce the game "One Little Birdie Learned to Fly."

CHAPTER XII

A Miscellaneous Collection of Dramatic Plays

1. **Shoemaker. Lawrence Park Playroom.** — Two boys wanted to be shoemakers. They enclosed a space with chairs and brought in a table to use as a work-bench. They made shoe soles out of paper. Some little girls who were playing house near by came over to order some shoes for their dolls; they left the dolls to be measured. The shoemaker stood the dolls up on a piece of paper and traced on paper some shoes to fit the dolls' feet. With the tapping of a little hammer the shoes were put on the dolls' feet, a little paste serving to fasten them on securely. Soon the mother came back, inspected the shoes, and paid for them in paper money. The shoemakers now added a shoe-shining department to their store. After a while, two more mothers appeared with dolls to be fitted to shoes. At noon, the shoemakers closed their shop by placing a chair in front of the open door. They went home and ate an imaginary dinner served by three girls. In the meantime some one broke into the store. The elder shoemaker caught and put out the robber; then both the shoemakers returned to their work.

This play continued for forty minutes, although the two boys serving as shoemakers were left entirely alone for the last twenty minutes. They seldom looked up from their occupations, although all the other children, attracted by a new slide, were playing noisily near by. This record shows the type of play characteristic of a child of kindergarten age who is allowed to construct his plot with very little suggestion.

2. The Elves and the Shoemaker. Lawrence Park Playroom.[1] — This play grew out of the children's interest in the shoemaker and his work and activities, and was the culminating and artistic expression of that interest.

Previous to the development of the play the children had visited a shoemaker's shop and through conversation, pictures, and play had gained some real idea and appreciation of the life and activities of the shoemaker and his importance in the community. It was about this time that the children became very fond of the story of the Shoemaker and the Elves, or the Brownies and the Shoemaker, as they called it, a story which I told them several times and then let them tell me, one child telling as much as he cared to, or could remember, the next child continuing from where the last narrator left off. Thus the children became very familiar with the story and there was enthusiastic acquiescence in my suggestion that we play it out.

A shoemaker and his wife were chosen. They immediately set about arranging their shop. The piano stool was used for the shoemaker's bench, a small kindergarten chair served for his stool, and a kindly janitor was importuned into lending his hammer. The brownies departed to brownie land, which was a room opening out of the playroom, and the door was immediately metamorphosed into a window through which the brownies entered the home of the shoemaker.

[1] This play was developed and written up by Catherine Swartz.

When we began playing, the children seemed to experience surprisingly little difficulty in finding words to express what they wished to say. This was probably partly due to the fact that they knew the story so well, and that rather than make our story merely descriptive we had incorporated the conversation of the elves, the shoemaker, and his wife into it. With the action it was different; for though spontaneous, it was often awkward. But the children as a group were quick to see where improvements might be made and to offer suggestions. Such questions from myself as, "What do you suppose the shoemaker's wife would be doing while the shoemaker was working at his bench?" or "How does your father work when he is tired?" would bring a response from every child and the one we as a group thought best would almost unconsciously be incorporated into our little play. So from a crude little dramatization it grew into quite a playlet, of which the children never seemed to weary.

We were especially fortunate in obtaining from the children's library a set of large, beautifully conceived pictures depicting a party given by the elves to the fairies. These pictures, better than any verbal description could possibly do, gave the children a clear image of what funny, fun-loving, mischievous little people brownies are conceived to be.

The play as it was finally dramatized was in three parts, the shoemaker's shop being the scene of them all:

a. The husband works at his bench while the wife sweeps and dusts. The husband says he is tired and

doesn't see any use in working so hard when no one buys his shoes anyhow; the wife, putting her arm around him, tries to cheer him up, predicts better fortune for the morrow, and goes out to prepare supper, to which she soon calls her husband. Returning to the shop they decide that as it is getting dark and late they will go to bed. This they do. Just as the clock finishes striking twelve, the brownies come leaping through the window and dance about the room, poking their fingers and noses into everything they see. One finds the shoemaker's hammer and an unmade pair of shoes, and, thinking it great fun, gleefully calls the others to come and help him play shoemaker. At cockcrow, when they are forced to depart, they leave behind a finished pair of shoes of exquisite workmanship.

b. The next morning the shoemaker enters his workshop and is delighted to find in the place of the cut leather he had left the previous night, a pair of exquisitely made shoes. He calls his wife, who is equally pleased, and predicts an early purchaser. The shoes have scarcely been placed in the show window when a customer enters the shop and buys the shoes, paying a good price for them. The shoemaker and his wife are in great glee and hurry off to town; he, to buy leather for more shoes; she, provisions for the house. On their return he says that he will cut out leather while she prepares supper. As on the previous night, supper over, they retire to bed, having decided before going that they would sleep with one eye open in the hope of seeing their mysterious friend, should he come again. The brownies return and this time

make all the shoes for which the shoemaker has cut leather, departing as before at cockcrow.

c. The shoemaker and his wife talk over the situation the next morning and as a mark of gratitude decide to make a little suit and pair of shoes for each of their little naked friends. They finish the suits by nightfall and spread them about the workshop before retiring. The brownies, who come back to play shoemaker, find the suits and have a glorious time arraying themselves in them. When they have all put them on, they join hands and dance about the shoemaker's bench, and as a final expression of joy perform the shoemakers' dance, the traditional dance which, through pantomime, shows the activities of the shoemaker. Just as they finish, the cock crows and the brownies disappear through the window, never to return.

The repetition of situation, action, and speech, the great amount of activity, and the fact that all the children of a group can take part make this story ideal for use with a large group.

3. **Blacksmith. Lewis Playground.**—After a visit to the blacksmith shop the children asked to play blacksmith. Some girls assumed the rôle of mothers of families living in different homes. Two boys kept the blacksmith shop. Another boy had a livery stable and took care of the horses belonging to all the families. Other children took the part of horses. The mothers went after the horses and took their children for a drive. Something always happened to the horses' hoofs; this occasioned a visit to the blacksmith shop, where new shoes were put on. The blacksmith took each hoof between his legs and nailed on a new shoe.

4. **Street Cleaners. Washington Park Playground.** — Two boys swept and cleaned the playground every day. Each time they demanded pay and were given paper money. They took this to the store and with it purchased sand cakes, pies, or bread.

5. **Livery Stable. Homewood School Playground.** — One child was the liveryman. He induced other children to be horses in his stable. Every few minutes he fed them, then drove them out to a watering trough to drink. One of the horses kicked and jumped, so had to be broken in. The liveryman tried out the other horses in teams of twos and threes. A man came to the livery stable to buy a horse. The liveryman showed off all the horses until the purchaser found one that suited him.

6. **A Telephone Play. Arsenal Park Playground.** — Some little girls were playing house. A pay telephone happened to be located in one of their houses, but of course the children were not allowed to take down the receiver. So they planned to have a telephone of their own. By placing a chair underneath the telephone the children could reach the mouthpiece. A receiver was constructed from a ribbon bolt and string, and the telephone was then connected with other houses. Then each member of the family took turns using the line. They called up members of the other household, inquired after the babies, discussed the housework, and invited each other to call.

7. **Telephone Play. A Home Play.** — The desk telephone was elaborate. It was made by sewing two cardboard rolls together and attaching a funnel-shaped

mouthpiece. The telephone was pinned to a table and a small cardboard roll attached for a receiver. A cord connected the receiver with a similar telephone in another part of the room. One day the following play occurred. A seated herself at the desk and called central. B answered. "Let's have the line busy before we begin," said A. "All right!" answered B. After several calls and reports of "line busy," A succeeded in getting her number. B then took the place of the person called. "Hello!" said B and waited. "Is this L's grocery?" asked A. "Yes," came the answer. Then A replied, "This is Mrs. A's residence. Won't you send me a pound of butter and a loaf of bread? How much are bananas?" "Fifteen cents a dozen." "You may send me half a dozen." "Yes, that is all for to-day." "All right, Mrs. A," B replied, "I'll send them right over."

A learned to use the telephone by playing this game. Previous to this time she had been timid about using the telephone. Conversing with the other children also helped to sharpen her mind for ready answers to questions.

8. **Fishing. Lawrence Park Playroom.** — One day the children began spontaneously to play boating. Some put the seats of two chairs together and sat on one chair with their feet on another. Other children played that the tables were boats. They used toy brooms for oars and rowed vigorously. Each child had a rope which he played was a fishline. He tied this line to his arm or to the boat and threw it out into the water toward blocks scattered here and there on the floor to represent fish. Whenever a rope touched a fish it was considered caught. If a

child wanted to land, the fish line became a rope and was used to tie the boat to the dock. Some children took the fish to their houses and cooked them for dinner.

9. **Boats and Diving. Lewis Playground.**—Three boys found a broad board near the playground and used it for a boat. With brooms for oars they rowed long and vigorously. After a while they took some of the girls out rowing. The girls sang "Lightly Row" while the boys worked at the oars. Another day the boys used the board as a skiff, carrying it on their shoulders around rapids and across narrow passes. After a while it became a diving board from which the boys jumped into an imaginary lake and then swam around. About a week afterward the same board was placed on a stump and converted into a merry-go-round.

10. **Ship Play. Washington Park Playroom.**—The smooth inclined plane belonging to the children's slide happened to be moved temporarily to the boys' playroom. It had never been there before and the boys were having great fun rolling balls up and down its smooth surface. By and by six children got astride the slide and said they were on a boat. Brooms were pressed into service as oars and the rowing was accompanied by a spontaneous chorus of "Ah!" One boy jumped out, seized a flag, and waved it at those still rowing. Then all got out, but the self-imposed leader, still waving the flag, made them get back into the boat. Someone suggested that water was all around them. One of the rowers immediately fell out of the boat and began to swim; the others followed

his example. One boy got into a large box which stood near and pushed it along the floor; immediately the rowers' oars became guns and all shot "Bang! Bang!" at the boy in the skiff. Then the swimming began again.

This play lasted about half an hour. It was arranged by a group of Italian and colored boys about seven to nine years old and was a very spontaneous play. It does not show a high level of intelligence. The primitive "Ah! Ah!" of the rowers was a most interesting example of spontaneous rhythm accompanying an enjoyable activity.

11. **Dressmaking. Washington Park Playroom.**[1] — It took a long time to invent a sewing machine, but when it stood complete it was certainly a glorious achievement from the children's point of view. A large chair made a good framework. Two blocks for pedals were tipped upon a low front rung of the chair in such a way that the little seamstress could really make them go. A couple of spools placed upright a little distance apart on the chair seat and connected by a piece of heavy wire stood for upright and horizontal shafts. To the right, on one end of the spool, hung a circle of rope for a wheel, while a piece of heavy twine suspended below suggested a belt. As fast as the seamstress sewed, the cutter and fitter supplied her with newspaper and tissue-paper dresses for both children and dolls.

By way of variety, the trade room changed one day to a home scene where sat a sewing party. In the kitchen near by the food was prepared and cooked on tiny stoves. A table was soon put in readiness.

[1] Described by Hazel Meanor.

Spool candlesticks with lavender shades stood in the center of the table, while beside each of their places a miniature candle was placed as a favor. The guests stopped sewing when luncheon was announced. The hostess and guests seated themselves with due ceremony. A waitress in cap and apron served in proper style. But alas! when it was time for dessert, the ice cream had not come. The hostess telephoned, but to no avail. There was nothing to do but pass the cookies, which was done by the hostess herself. Then the serving began all over again. When the guests went home, one was heard to remark, "Let's have another sewing party tomorrow."

Real cookies were served; the ice cream was imaginary.

12. **Train. Lawrence Park Playroom.** — Two kindergarten tables with long sides placed together made an excellent car. Chairs arranged in rows of two were placed on top the tables. A small stand in front of the car became the coal car. The engineer sat in front of the coal car and manipulated the piano stool as a brake. The fireman shoveled coal into the engine, using a broom for a shovel. In the meantime, the station at the other end of the room was filling up with people. The steps of the slide became a ticket office, where an agent was kept busy preparing paper tickets for the long line of passengers. Every passenger was asked where he wished to go and was requested to show money before a ticket was given him. When all had secured tickets, the *caller* announced the train. Most of the passengers deposited their baggage, consisting largely of dolls'

cabs, in the baggage car under the table. After the passengers had seated themselves the conductor walked down the aisle and collected the tickets. The engineer sat in his cab and applied the brakes. The brakeman stood in the rear of the car and signaled with a flag and lantern to a switchman near by. Whenever the train was supposed to change tracks a chair was moved from one place to another to represent the switch. By and by the brakeman called, "Mexico." All the passengers got off and stood in a line waiting for their baggage. The train crew went to the station to draw their pay.

Suggestions for Promoting Manual Activities in Connection with the Plays Recorded

Dramatic Plays Involve Constructive Activities. — It is almost impossible to separate the constructive plays from the dramatic, so intimately does one type of expression weave itself into the other. When a spontaneous dramatic play springs up the tendency is to use some static object in the environment as a background; to convert a chair into a boat, a sofa into an island, a hall closet into the retreat of bears. The attention is likely first to be centered upon the dramatic. Interest, however, often turns to the details of the objects or events represented. Then is the teacher's opportunity to assist in constructive projects; to supply suggestive materials and pictures for these projects, leaving to the children the initiative as to ways and means and the uses of materials.

In the shoemaker play the children attempt to make the shoes they wish to sell. The blacksmith play

involved the construction of a shop equipment with the necessary tools to carry on the work of the blacksmith. The telephone play involved some constructive skill in planning and making a telephone; fishing required the building of boats; dressmaking involved making a sewing machine; and the other plays recorded could easily develop manual projects. It is almost impossible to conceive a dramatic play which does not involve some use of manual activities to embellish the mental imagery.

1. **Shoemaker.** — In this play the boys, who were about six or seven years of age, could have been stimulated to build out of blocks or boxes a little store, and to equip it with tools resembling those used by the shoemaker. Shoes in the form of sandals could have been cut from cardboard to fit the children's feet, then sewed into permanent form. Not only would the children acquire a fair degree of skill, but they would enjoy making shoes for customers. The making of shoes for real people involves a larger social purpose than the mere cutting and pasting of dolls' shoes. Shoe-polishing could have been of the commercial type instead of being mere make-believe play. The making of toy money could have been incorporated into the play. This involves skill in tracing and cutting and could have been done by a group outside the store. The cardboard coins must resemble real quarters, fifty-cent pieces, and dollars if the real value of money is to be taught through spontaneous play.

2. **The Shoemaker and the Elves** began as a spontaneous dramatic play and finally crystallized

into an art form involving dialogue and the dance. The constructive interest could have been utilized, however, in helping the children to make simple brownie suits and caps for the final performance of their drama at a playground festival.

3. **Blacksmith.** — The play recorded is typical of the rough-and-ready dramatizations that spring up spontaneously on a summer playground. The children had visited a blacksmith's shop and had gained some knowledge of his activities. What more natural than to build the anvil, construct a crude bellows, and make horseshoes and nails out of clay or paper? The dramatic play described involves social coöperation of an unusual degree, which should not be lost in an effort to embellish the drama by means of manual skill. The groups could take turns in impersonating families and dramatizing the work which goes on in a livery stable and a blacksmith's shop, in order that all might relive the experiences of each unit in the play.

4. **Street Cleaners.** — In the section of the city in which this play occurred, it is especially necessary to stress personal and group hygiene. The children of the entire playground could have been organized into a street-cleaners' brigade and could have cleaned the playground or the street. Small shovels could have been constructed. Instruction in the hygiene of the street could have been given through pictures and simple facts related to the dramatic play.

6, 7. The telephone plays afford unusual opportunities for the manipulation of blocks, wood, and other plastic materials. Children of kindergarten

age are easily satisfied with constructing a receiver and mouthpiece through which they can carry on conversations with their neighbors, order groceries for their tea parties, and telephone a doctor when their dolls are ill. Children from seven to ten years of age can learn by experimentation the simple physical laws involved in telephoning and can work out play projects illustrating the application of these laws.

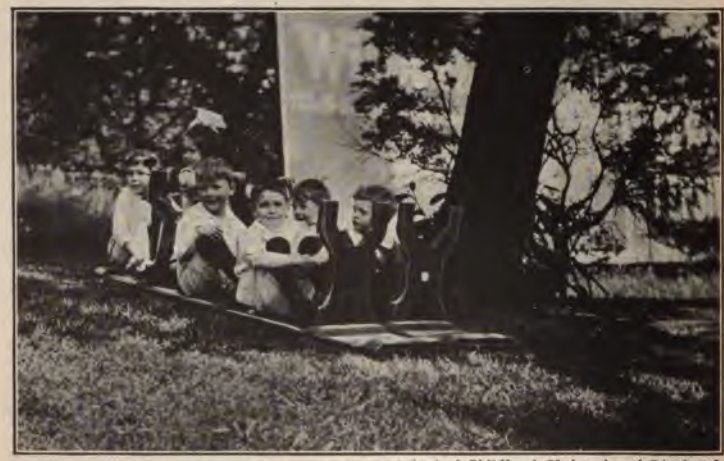
8, 9, 10, 12. Dramatic plays in which ships and trains are used afford splendid opportunity for constructive activities. A set of rough floor blocks is useful in building large boats and trains possessing strength and capacity to hold several children. Long boards or tables can be used as a foundation, while wheels, cars, sails, and machinery can be added as needed.

Sometimes children prefer to make small models and to play out the dramatic events individually by making the boat or train go through certain movements and by supplying verbally the descriptions of these movements.

11. Dressmaking. — Many play projects involving the use of manual activities arise in connection with dressmaking plays. There is the opportunity to create toy models of sewing machines, or to invent crude looms and toy knitters on which real sweaters may be knitted for dolls and attractive rugs woven for the dolls' house. Children from seven to ten years of age show an omnivorous appetite for building crude machines. They often study sewing machines and get information concerning how these may be made. In this way children acquire considerable

skill in manual activities and obtain valuable mechanical information.

Dressmaking projects also afford opportunities to teach children some knowledge of textiles. Color training can be made an integral part of this work. Skill in sewing by hand can be acquired as a means of working out some play project, such as making a cape for Little Red Riding Hood or a crude Quaker garb for a Thanksgiving festival.



School of Childhood, University of Pittsburgh

PLAYING BOAT

CHAPTER XIII

THE DRAMATIC PLAYS OF ONE CHILD [1]

The Importance of Studying the First Dramatic Expression. — So few of the dramatic plays recorded in the playground records have to do with the child under five years of age, and so important are these early efforts at dramatic representation, that it seems advisable to present the records of one child's dramatic plays with notes on their psychological significance. In the case of each play activity presented for study it is possible to see why and how it arose in experience; thus we have a background for the interpretation of dramatic plays which it is impossible to supply in connection with the playground records.

The First Dramatic Plays Have Their Roots in Reflex Imitation. — The infant's first dramatic plays have their roots in reflex imitation. The child laughs with his mother; bursts out crying if she startles him by loud cries; imitates her gestures and tones of voice. Many times he does these things unconsciously, but gradually he does them with intention. When memory is developed so that he can retain in his mind two possible choices of action, a mental state arises which permits real freedom in play. It is hard to predict with any degree of certainty what the child's first dramatizations are likely to be, for he shows an almost uncontrolled tendency to respond to

[1] From a mother's notes on her child's spontaneous play up to the fifth year.

his environment, both physically and socially, by imitating the things which challenge his attention. Thus R, brought up in a civilized community, naturally reproduces the mode of action common to his home and neighborhood, while a child reared in a savage tribe responds to the savage type of life. R's repertoire of dramatic plays includes washing clothes, scrubbing floors, dusting chairs, pouring tea, etc. A child of the savage type of life builds fires, chases wild animals, imitates the acts of killing wild beasts, and engages in mimic warfare.

The Outstanding Characteristics of the Dramatic Plays of Infancy are Activity and the Sensations Resulting Therefrom. — The outstanding characteristics of children's early dramatic plays are enjoyment of physical activity and the resulting sense impressions. The subjective attitude is of more importance to the child than the objective result. This fact is important in interpreting the play of children under six years of age. The record of the boy who was blissfully content to use a turkey roaster as Santa Claus's sleigh is one case in point; it is an example of the four-year-old's satisfaction in activity for its own sake and in the sensations resulting therefrom. The turkey roaster permitted active locomotion over the floor and also served as a vehicle for toys; these were the sole requirements of a sleigh to this boy.

Progression in Early Dramatic Plays. — In the early dramatic plays we see progression and increased complexity in both movement and ideas. Progression in movement comes through adjusting the mechanics of the large bodily movements to the purpose they are

supposed to serve in play. For example, hopping like frogs involves adaptations from mere hopping. New sensations and ideas become tied up with the movements and produce modifications in hopping. Conversely, ideas grow in complexity as they find expression in movement. The action reacts on the idea back of it, modifies it, and brings suggestions of new ideas connected with movement.

Looking through the following records of dramatic plays, we observe that the movements involved are reaching, pulling, hauling, pushing, running, walking, hopping, and jumping. During the second and third years the coördinations connected with these movements are rapidly improving, for the fundamental movements become reflex during the first three years of childhood. Studies of the neuro-muscular system indicate that the first three years are the ones in which the movements connected with the spinal cord and the lower brain centers come into almost complete activity.

After this development is completed, we see more freedom in the use of gross bodily movements. The child's mind is then free to develop skill in using the movements for increasingly difficult acts.

Progression in Ideas. — The infant's first dramatic movements are usually gestures. Thus in the early part of the second year we see R playing that he reads, eats, warms diapers; in fact, performs the acts most closely associated with his physical welfare or the habits of those closest to him. Later he washes, irons, scrubs, makes beds, dresses up like adults, and in fact relives all the events connected with the household.

As soon as he gains wider access to the sights and sounds of the street, park, or country, we see him taking imaginary journeys on trains, boats, and automobiles. He delights to deliver ice and groceries, dine at restaurants, play the rôle of woodpecker, cat, dog, bear, frog, and alligator. Nor does he tire of representing household activities; he continues to wash, scrub, and cook. Pictures, stories, and excursions initiate him into the world of trade; he pounds like a blacksmith; works in a factory, builds airplanes, and runs a moving-picture show. He progresses not only in the type of dramatic acts he performs, but in the number of events he incorporates in one play. Thus at fourteen months he merely gestures to represent eating or reading; at three years of age he relates eating to cooking and to feeding dolls, and relates reading to other acts of his father or mother. His plays show relations between ideas, in fact take on the nature of a plot.

By the time he is five years of age, his dramatic representations reveal considerable complexity of idea and plot, as a perusal of the records will show. For example, R built a bridge under which he ran an engine; this in representation of a railroad scene he had recently observed. In an instant his play changed. Some chance association revived memory images of an experience he had heard about four months before. He brought out his motor truck. Placing a female doll on the seat, he said, "Here is Mrs. H taking a ride. Where is the cat?" A block became the cat; it jumped on Mrs. H's lap, to be removed and thrown down by her son. Then a dog chased the cat up a

tree. Here we see a series of dramatic events showing sequence. There was a beginning, a middle, and an end to the plot, and the arrangement of events in the plot varied only slightly from the relation of the events in the incident he had once heard.

The Rôle of Adult Suggestion in Connection With Early Dramatic Plays. — The mother or teacher plays an important rôle in training her child's imagination through dramatic play. There is a growing recognition among parents of the power of suggestion. However, where parents interfere and interrupt there is always the danger of breaking abruptly into the child's mental life and of hindering growth by implanting adult ideas. When the child begins to weave familiar incidents into a dramatic plot, it is best to allow him to organize his own ideas spontaneously, since he alone knows the relationships which exist among the facts he is seeking to express. It is best always to let these ideas take natural form, and then to make suggestions through questioning, stories, pictures, and statements of related facts which help to clarify and to organize his ideas. Even then, the child must do his own selecting and rearranging of facts in accordance with the natural growth which results from the suggestions. It is difficult for an adult to play the rôle of happy playfellow and teacher in one. To acquire the ability properly to supervise a little child's play requires real sympathy and a training commensurate with the seriousness and importance of the task.

Records

Imitative-Dramatic Acts of the First Year

10 Months. — People sometimes entertain R by trotting their fingers across the tray of his high chair. R tried to do the same. He succeeded only in opening and shutting his fingers on the tray. A month later he scraped his tiny fingers across the tray, producing some semblance of the movement and noise he was trying to copy.

11 Months. — R's mother pretended to bite R's finger when he placed it on her lips. R thought this great fun and laughingly continued the game.

R sneezed. His mother did the same, laughing. R laughed almost hysterically every time she imitated his act.

R sat behind a curtain and occasionally drew the curtain aside, laughing as his mother said, "Peek-a-boo."

In these simple imitative acts which occurred at the close of the first year we see the beginnings of dramatic play. We notice the first crude efforts consciously to reproduce the acts of another. A sense of the fun of pretence is found in the finger-biting play. A realization of the comic is found in the reflex merriment resulting from the sneezing episode.

Imitative-Dramatic Plays of the Second Year

14½ Months. — R was standing in his pen. His father jumped up and down outside, laughing merrily. R attempted to jump up and down. As he could not walk, he succeeded only in flexing his knees and

bobbing up and down. He showed unmistakable signs of pleasure from the kinæsthetic effects of the imitative act.

One day R's mother playfully donned a silver bread dish as a hat. Later R laughingly slipped his doll's hat to his head. At the time, this appeared to be an act of mere manipulative activity; however, he followed it up in a few days by placing other hat-like objects on his head — a box and an embroidery hoop.

That social imitation occurs at an early age is seen in the following playful acts. R's mother pressed her first finger on a rubber doll to make it squeak; R tried to produce the same squeaking noise by pressing his first finger on the doll. She rang a bell; he did the same. She waved a buttonhook in a circle; R waved it horizontally. She rattled a buttonhook about in a glass jar; R did the same. She tapped a buttonhook on her chair; R waved it horizontally.

15 Months. — R always watched with interest when people lighted a fire in the gas grate with a wax taper. One day he found a broom straw; picking it up he attempted to light a fire in the grate. When supplied with a wax taper, he touched it to the grate several times and seemed disappointed that no flames sprang out.

R warmed a diaper by holding it before the gas grate. It was a playful but serious attempt to reproduce an act connected with his own welfare.

R read a newspaper.

R ate from an empty dish and spoon.

R dusted the floor with a diaper and scrubbed it with a brush.

17 Months. — When his mother lay down in the library, R walked along the edge of the couch, pulled her nose, played "peek," and laughed loudly at the slightest exchange of sociability.

19 Months. — Hiding play. "Where is Chine?" said his mother. R looked under furniture, saying, "Gone!"

21 Months. — Ironing. Using a warm iron R pressed out pads, sheets, and diapers. This activity lasted fully a half hour.

Hide-and-seek. R's mother hid in a corner. He ran to find her, laughing and falling into her arms when he discovered her.

23 Months. — Playing with his shadow. R ran about, looking at his shadow as it preceded or followed him.

24 Months. — Tea party. R had a new tea set. He filled each cup with water and drank, or emptied the water from one cup to another.

Imitative-Dramatic Plays of the Third Year

Sprinkled salt on a cloth and proceeded to powder his face.

Swept the floor with a broom

Squeezed an orange and strained the juice through a tea strainer.

Held toast to his doll's mouth.

Applied a can opener with point down.

Attempted to open a crate with the fork end of a hammer.

Tried to mash vegetables through a sieve.

Imitated a postman by carrying a bag and umbrella.

Played he cut bread by sawing a can with a stick.

Poured water out of a coffee pot into cups.

Cleaned a stove with newspapers.

Attempted to stir food which was cooking on the range.

Made his own bed fairly well, adjusting pad, sheets, and pillows; sometimes he pinned his doll in the bed.

Shoveled snow, imitating both the digging and the throwing movements.

Brushed his hair, imitating the downward sweeping motion.

Held a curling iron to his head.

In playing with a silver neck chain, he adjusted it across the front of his dress in imitation of his father's watch chain.

Tried to expectorate, making a queer little noise in his throat.

25 Months. — R was taken to visit a friend in a hospital. He had been there but a short time when he began to cry, "Bye-bye" and "Gar-Gar!" Grasping a small valise he made several trips to the door, saying, "Bye-Bye!" each time he started on a trip. Later he put a newspaper on his head for a cap and with an increased sense of the fitness of things he went through the formalities of leave taking with added enjoyment.

R indicated by means of gestures that he wished his cuffs turned up in imitation of those of a guest. Thus are trivial customs and acts acquired through social imitation.

Doll Play. R attempted to pin a diaper on a small rubber doll. When his mother supplied a doll bed and

some extra materials for bedding, R derived considerable pleasure from putting the doll in this bed and covering it carefully with a sheet.

Mock sympathy. R threw a rubber doll to the floor several times, saying "Oh! dear!" This effort to reproduce a situation in which he himself had experienced sympathy is indicative of a growth in imaginative ability.

Bathing his doll. R likes to bathe his rubber doll or celluloid duck while he himself is being bathed. He goes through the acts necessary for cleanliness.

Imitating acts of companionship, R takes his doll to bed with him and asks for his Teddy bear.

Simulating sleep. R plays he is going to sleep, covers himself with a blanket, and shuts his eyes. Here is another example of pleasure in *pretending* an experience which is distasteful in actual life.

31 Months. — Ride a cock horse. Sitting on the foot piece of the sewing machine R rocked back and forth calling, "Get up 'orses!"

Playing Pilgrim. R watched a pageant rehearsal. In a church scene R knealt down to pray and stood to sing with the Pilgrims.

Playing stake driver. R watched some men drive a stake. He did the same, imitating their acts of digging and planting

Engine. R enjoyed pushing two or three camp chairs across the floor of the camp dining room, saying "Choo-choo!"

32 Months. — Playing boat. R sat in a tent on a low chair, pulling on a rope attached to the tent. "Here comes a boat!" he called out.

Playing soldiers. R placed a closed umbrella over his shoulder for a gun and marched like a soldier. "Hip-one-two-three!" he called out.

Mock discipline. During mealtime R is sometimes admonished for talking. One morning he admonished his mother, who was singing softly. "Sh!" he said, his finger on his lips. She stopped singing, whereupon he said, "Sing again," then reiterated, "Sh! Sh!"

Imitative-Dramatic Plays of the Fourth Year

Frog and Alligator. — R hopped vigorously on all fours to represent a frog; then he became an alligator, slowing down his movements considerably. By and by he said, "Here come a frog and an alligator!" He himself impersonated both by hopping like a frog and pushing a block of wood before him to represent the slower movements of an alligator.

A little child invariably imitates the striking characteristics in the things about him. It is the characteristic movements or gestures of frogs, alligators, and most other animals that are first imitated in play.

Washing Clothes. — On the day the laundress appeared, R invariably helped himself to soap, water, and a small bathtub, and proceeded to rub out bibs. He would play thus for fully fifteen minutes, wringing the bibs dry, hanging them up, and washing them again.

The coming of the laundress merely suggested an enjoyable manipulative activity which consisted of vigorous movements in imitation of an act connected with the home.

Automobile. — Whenever an automobile stopped at the house R observed it intently. His first dramatic representation occurred shortly after his third

birthday. He sat perched in a fireside chair, his dolls arranged in a stiff row back of him. Between his knees rested a coffee can used as a steering wheel. Soon he was seen to jump out to crank up the machine; his little body moved rhythmically up and down as he performed this imaginary work. "Ride in my automobile with me, Mother," he said, in a matter-of-fact tone which took her acceptance for granted. As she climbed into the seat at his side, he jumped out again to crank up, then seated himself beside her and turned the can around several times to produce the effect of a steering wheel.

This play is typical of a three-year-old child's conception of locomotion in an automobile. The striking features were the steering wheel and the cranking up preliminary to starting. His native tendency toward sociability demanded that he find someone to share the ride with him.

Santa Claus Plays. — 1. The Christmas spirit had lived on into February in this boy's vivid memory of Santa Claus. One day he fastened a waste-paper basket on his back for a pack and implored his mother to lie down and sleep. She complied with his request. He watched closely lest she open her eyes while he trudged about with his basket of toys, and finally deposited his pack at her feet. She jumped up in mimic glee and began to examine the toys. "Here is a music box," he said, handing her a paper, feeling not in the least its inadequacy as a music-box. She cranked up the music box, at the same time singing a tune, and R stood by entranced.

The characteristic feature connected with this three-year-old's representation of Santa Claus was his trudging about with a pack of

toys *after* the children were "snug in their beds." The fact that a paper was picked up to represent a music box is characteristic of a three-year-old's ready acceptance of almost any object to represent the thing he has in mind.

2. One day when R was restless, his mother gave him the top of a large roaster to play with. It became a boat for a while, then a sleigh. Soon she noticed that he had filled his sleigh with toys and was pushing it toward her. "Lie down!" he demanded. Quite by chance R sat down on the sleigh and conceived the idea of driving his load of toys "o'er the snow." "I want to take my sleigh out-doors!" he called out. His mother replied, "But I can't have my turkey roaster taken out-doors!" "It is not a turkey roaster," he explained, "it's a sleigh!" A little later he returned to the sleigh and slid over the floor toward her. Sing, "Clap, clap your hands!" he demanded, and from that time on he usually asked for this song to describe his Santa Claus activities.

3. As a substitute for the roaster, R's mother suggested that he use his low coaster wagon. R seated himself in the front of the wagon with the waste-paper basket full of toys on the back of the sleigh, as he had seen Santa do in "'Twas the Night Before Christmas." A stocking cap perched on the top of his head gave more feeling for the part, and some reins with sleigh bells attached rang merrily in unison with his movements over the floor. Slapping the reins he urged his imaginary reindeer on. After joy in the purely locomotive features of this play had subsided, he asked for the song and the go-to-sleep features again.

R's protest that the turkey roaster *was* a sleigh is an example of the vividness of his imagery. His mind clothed the roaster with sleigh-like characteristics such as he had observed in the Santa Claus books. The incorporation of a Santa Claus song into the play was natural enough. Less action occurred when the song was used. Evidently the words describing

> Now swift o're the snow the tiny reindeer
> Are trotting and bringing old Santa Claus here

were a satisfactory substitute for the action, for he would often sit perfectly still while his mother sang. His interest shifted from joy in propelling himself about on the sleigh to pleasure in dramatizing Santa's visit inside the house.

4. R asked his mother to play Santa Claus with him. "How?" she inquired. "*Be* Santa Claus," he replied, giving her a street hat. Then he adjusted his own stocking cap, strapped a pack over his back, and began to strut about. His mother sat on a low stool. "I want it!" he said, trying to push her off the stool. "This is my sleigh!" she replied. He then seated himself on his low coaster wagon. Presently the mother harnessed a chair to her sleigh, saying to R, "See my reindeer!" "I want some!" said R, doing likewise. "On Dasher! On Prancer!" she cried, slapping the reins. Presently she loaded her pack. R did the same. Once in a while she got out of the sleigh to leave some toys at the houses. Always R got out and loaded these toys back on to his own sleigh.

This is an example of adult leadership in play. True, it was about the series of dramatic events the child would soon stumble upon, but the initiative came from the mother, not from the child; for when she stopped, he started to play something else.

5. Interest in playing Santa Claus continued high. Often when strangers inquired R's name, he said, "I'm Santa Claus!" He was indeed Santa Claus a good part of the day. Each room in the house had certain chimneys for him to climb, certain sleighs or packs to use. He not only felt the part of Santa Claus continually, but he would not permit the objects he used in this play to be interfered with.

One day someone started to take a chair which he had customarily used for a reindeer. R cried out, "Oh, no, don't! It's my tiny reindeer." In reality, he was not using the chair at all, but it was still a reindeer to him.

6. A new picture of Santa Claus driving his reindeer up to the moon made a vivid appeal to R. After this whenever he played Santa Claus he was frequently heard to say, "I'm way up in the sky!" Another new feature was added when he was told a story about Santa bringing little Philip a velocipede made by the brownies. His mother had put into her story Santa's words, "Everybody asleep!" as he neared Philip's house. These new features considerably altered his Santa Claus play. He sat on a pillow loaded with toys, pushing a carpet-sweeper back and forth to represent the movement of reindeer. He was heard to say, "I have to get a velocipede!" Going to a sofa near by, he began to imitate a carpenter at work. "I'm making a wheel!" he exclaimed. "Now the velocipede is done," he added, at the same time placing a toy motor truck in his sleigh. "Now, dash away, dash away, dash away!" he cried, hitting the carpet-sweeper with a stick; "I'm up in the sky

now, and I'm never coming down." Then in a moment he said to his mother, "You be Philip asleep!" "Everybody asleep!" he called out; then he got back into his sleigh and enacted the drama all over again.

Here the stuff with which imagination works is seen very clearly. The new plot came from experience and from events pictured in books. The making of toys had been suggested by the mention of the brownies as Santa's helpers.

Valentines. — A little girl rang the bell and gave R a valentine. As soon as R had examined the card, he said, "I want to be Betsy and bring valentines." Evidently the envelope suggested the postman's bag, for he became a postman. Collecting some envelopes, he brought his mother several valentines on different trips.

Here we see the enjoyment of manipulating objects and of enacting the rôle of the postman, and pleasure in physical activity.

Grocery. — R's mother sat by the fire writing. Beside her was a delivery man. Taking blocks from his wagon, he deposited them one by one on the arm of her chair, naming each article. "Here's soap, sugar, potatoes, prunes," he would say. Without demanding any coöperation in the play, he removed the blocks from the arm of the chair to his delivery wagon and made another trip from the store to his mother.

Pleasure in physical activity, in imitation, and in manipulation explains the enjoyment in this play.

Writing. — R asked for ink. He was given a bottle of water. He dipped his pencil in the water and

wrote several lines. When his mother started to write a letter to a friend he said, "Oh, don't, I wrote her!"

Imitating an adult activity is the chief pleasure here.

Iceman. — R was playing iceman. In order to get the effect of a high, heavy wagon he had pulled out the top drawer of a chest. This was the ice wagon. There he sat in this perilous position in an open drawer, with a whip in his hands urging on a horse—a kitchen stool harnessed to the drawer.

Miner. — R had seen pictures of miners working underground. He played miner out-of-doors by picking with a stick in the snow. Indoors he laid blocks on the floor to represent coal. With the small end of his gun he picked and hewed the blocks, shoveling them into a coal wagon. One day he donned a cap and said, "I need a lamp on my cap."

"Pockets In My Trousers."— In one of R's books was a picture of a small boy with hands in his pockets and a hat on the back of his head. A little verse described the boy's first trousers. One day R stood with feet astride and gloves dangling from his pockets, a hat perched on the back of his head. "I've got pockets in my trousers!" he exclaimed. He continued to play thus for about ten minutes.

This is a good example of an imitative-dramatic play of a three-year-old. Here the posture of the small boy had so impressed R that he reproduced it dramatically.

Sailing. — "I want a boat," said R, and forthwith produced a wheelbarrow to serve as a boat. "Now I need oars," and he placed a board on each side of the

boat. Sitting in the boat accompanied by his sailor doll and toy animals, he dipped the oars in the water, with some pretence of regularity. To add zest to the play his mother dropped a doll in the water, calling, "Help, help!" R merely looked at the doll until his mother added, "Aren't you going to help the man out?" Then R jumped out of the boat and rescued the man. "I'm Captain ——," he said, giving her the doll. Captain —— had taken them for many sails in the summer and had lived on in R's memory. "Are you in his sailboat or in a rowboat?" asked his mother. "The sailboat," replied R. "I see no sail," she commented. Since R seemed unable to produce a sail, she made one out of a newspaper and a toy broom. R now felt the need of a steering wheel. In the summer, the working of this wheel had greatly interested him. He found a broken pulley and used it for steering. "I turn the wheel to make my boat go fast," he commented. "I'll close the doors so I can't fall out," he said, evidently thinking this time of an automobile. "I turn the sail this way. I go this way," said R, moving the sail to one side.

The confusion of imagery noticed in this play is characteristic of a three-year-old. He can hold no set of images in his mind for a long time, and rides in a boat one minute and in an automobile the next. In looking at a boat or an automobile he observes only striking things such as sails or wheels, and has little knowledge of their real uses.

The boat play continued for some time. R so completely felt the part of the captain that while interest in this play lasted he requested his mother to say "Captain ——" whenever she called him.

Woodpecker. — R noticed a picture of a woodpecker boring a hole in a tree. One day he played he was a woodpecker and pecked at a stool. His mother asked, "What does a woodpecker use for pecking?" R pointed to his mouth, saying, "His bill." Evidently he felt the inadequacy of his mouth as a bill, for he soon appeared with a clothespin in his mouth and proceeded to peck the chair with the clothespin. As very often happened with R in his dramatizations, his interest was sustained over night. When he awakened the next morning, he said, "I'm a woodpecker!" Climbing out of bed he ran for the clothespin and began to peck at the chair and stools. "What does the woodpecker do when he pecks?" he asked. His mother replied, "Dig food from the tree." R asked, "Does he talk?" She answered, "Soon the birds will return and you'll hear them chattering and singing." In a moment his interest flitted away from the thing he was playing; "I'm not a woodpecker now; I'm a miner," he commented.

Restaurant. — In one of R's books there was a picture of a little girl getting into an elevator. The accompanying story related the little girl's experiences in a store, where, accompanied by her father, she was permitted to purchase a dress and to lunch in the store restaurant. After hearing the story, R said, "Where is a tray?" He carried a tray to his toy closet and arranged carefully upon it a varied assortment of dishes. Returning with the tray he fed his Teddy bear. Then, turning to his mother, he said, "Do you want lamb chop and baked potato?" It afforded him considerable pleasure to see her eat. Soon he

said, "I'll get you some ice cream and cake." After serving her with dessert, he said, "Now eat your ice cream and jelly cake."

Having disposed of the meal in the restaurant, R turned a stool upside down to represent an elevator; sitting on a low stool beside it, he said, "Down, down, down," or "Up, up, up." To his mother he said, "You ride!" She managed to get within the narrow compass of the elevator and was given his Teddy bear to hold. Later she showed him how to make an elevator door which would slide open and shut.

It is an interesting fact that the little girl dining with her father was permitted to eat only the articles of diet prescribed for R's own noonday meal. The admonition to his mother, "Now eat your ice cream and jelly cake!" was given in the same solicitous tone with which she urged him to eat *his* food.

The Little King. — Someone must have told R about a little king, for all during breakfast he made remarks like these: "Does a little king eat this way?" "Does he like oatmeal?" Later he played he was a little king and donned a hat for a crown.

His idea of kingship did not extend beyond the crown.

This play grew out of the natural tendency to dramatize anything that interests for the moment. The story did not become a permanent part of R's story repertoire.

Popping Corn. — With much interest R watched his mother pop corn in a skillet. Then he said, "I'm going to get me a popper." He returned with a pan containing a few blocks to represent pop corn. Covering the pan he shook it back and forth on the floor in imitation of corn-popping.

Susie and Danny. — One day R came to his mother, saying, "I'm a little girl." Entering into his playful mood, she replied, "Yes, little Susie." From that time on he was Susie. At night his mother chanced to open a magazine on the page of which was a picture of a boy and girl under an umbrella. She made up a little story about Susie and Danny going to school in the rain. R was fascinated with the picture and asked her to repeat the story again and again. When he was undressed for bed he told his mother that he was Susie going to bed and asked her to put Danny to bed. In the morning when she entered his room, he said, "Call Susie," then added, "Take Danny out of bed!" All day it was "Susie this" and "Susie that." If his mother called him by his own name, he corrected her.

This imaginative play lasted several days. Finally R's mother began to feel that *her* recognition of the Susie personality as her child was interfering with her personal relations with R. So she said, "I have no Susie, you are R. You may have a Susie of your own." And R did have a Susie as an imaginary companion for several days.

Train. — 1. R's first train consisted of a washboard, a rocking chair, a dump cart, and a procession of other objects. He invited his mother to ride in his train and then volunteered to be a big black porter. The big black porter said to the mother, "It is time for you to go to bed." She suggested that the big black porter make up the beds. Of his own initiative he covered her up with a bib, saying, "Here is a blanket." Later he fetched a throw from the sofa. By and by she sat up in bed to see the sights from the window.

He came to her and said, "I'll shut the window!" He hovered constantly near her to see if she was all right.

R remembered several nights spent on a sleeping car and took real pleasure in impersonating the porter, about whom clustered many pleasant memories connected with train.

2. This train was constructed by connecting a child's rocker, representing an engine, to a low coaster wagon, representing a car. A can was placed on the seat of the rocker to serve as a smokestack and a box became the engine bell. R made no effort to propel the engine. He merely sat within the train and enacted a drama in his own mind. He said, "Engine go!" When his mother approached, he cried out, "Big black porter will help you in!" Yet he made no effort to assist her. So she made no attempt to get in the train. "Toot, toot!" she said. "Make the cars go!" replied R.

R's favorite train plays consisted of propelling something over the ground, and this play is reported in contrast to the usual type of play a child of pre-kindergarten age delights in. There are times with almost any child when the drama is enacted mentally instead of physically.

Fishing. — R was given a tub of water in which to play. He found a long twig which served as a fishing pole. He then placed a spoon, a fork, and a nailbrush in the water to represent fish and pulled them out on the bent twig. He kept saying, "I caught a sunfish! I caught a catfish!"

Cat and Dog. — R started to dramatize a story of a mother cat running away from a dog who constantly bothered her little kittens. "I'm the little kitten!" said R, cuddling up to his mother; "tell me to come."

She became the mother cat warning her kitten to creep closer. "But who will be the dog?" asked the mother. "Let me be the dog," said R, whereupon his mother fetched a toy bear to represent the kitten. R got down and crawled about simulating a dog barking at the kitten. The mother cat hissed and scratched at the dog; then, taking her kitten, ran away on all fours. This play was repeated several times.

Here is a characteristic impersonation of animals. R preferred being the dog because he had a more interesting part to play. He felt a sense of power in being able to frighten the cat.

Factory. — R said, "Let's build a factory." He made a poor building and had to be assisted to construct a better one. "Let's have the men go to work," said R; yet he suggested no way in which to do so. "You could use your paper dolls for men," his mother suggested. R looked pleased at the suggestion. Placing the dolls in an automobile he wheeled them to the factory. "Now the whistle will blow for them to go home!" he said. By and by he added a wheel to the factory. "See the wheel go in the factory!" he said as he turned it round and round.

This play is a four-year-old's dramatic description of a factory. Not far from R's home is a furniture factory at which men begin and cease work at the blast of a whistle. R had seen pictures of machinery and somehow connected wheels with factories. The use of paper dolls as men did not suggest itself to R, because he had not yet reached the stage where he required exact representation of facts. He was satisfied to convert blocks of wood into firemen. His mother's suggestion was not of much value, therefore.

Shadows. — R had frequently heard Stevenson's poem about shadows. He had often noticed his own

shadow. To-day he held a toy over his head to give an elongated effect and played it was a shadow chasing him about.

Picture Show. — After R had been taken to a moving-picture theater he built one with his blocks. Ushers were stationed at the aisles. "They have flashlights," said R. Musicians sat in front of a cardboard box which served as a screen. A colored picture book was placed against this box, and the leaves turned occasionally to represent changes in pictures. Cubes and pillars were used for the construction of everything in the theater; and cubes were seats, while the pillars served as ushers, violins, and flashlights. The dramatic play was purely imaginative. R merely conversed about the happenings in the theater. "It's dark now." "Here are the flashlights." "More musicians are coming in." "Here are the pictures." "More people are coming in and I'm showing them where to sit." "I have a flashlight; see it!" "Here is a dog trying to get in." "The door is shut." "The picture is 'most over." "No! I was just fooling." "I got a flashlight."

In the beginning of this play the interest centered in laying out a moving-picture house. After that, it changed to interest in the events: the going and coming of people, the showing of pictures, the flashing of lights, and the music. The play, then, represents a union of the dramatic and the constructive interests.

Airplanes. — As a result of several hours' effort R evolved some airplanes which showed the characteristic features. Then his interest shifted to dramatic events. "Watch the airplane fall down and burn up!" "See! the man fell out!" He deliberately

destroyed the airplane as he brought it to the ground, pulling it apart to represent its broken condition. "Now it's on fire!" A hastily improvised fire engine came to the rescue. It was in reality nothing but a cardboard box, yet it possessed the requirements of a complete fire brigade. In each oval depression of an egg container sat a tiny wooden block to represent a fireman. The engine was a cylindrical thing, a mere tin can, yet it assumed dignity and importance as an instrument useful for the boy's purposes. When the position of the burning airplane was reached, the firemen jumped out to extinguish the fire. There were so many of them that they surrounded the airplane. "Do you know why there are so many firemen?" asked R; "I need them to work." In a flash the trend of thought changed. "Watch the firecracker shoot!" he said, vibrating a rubber band which had formerly held the various parts of the airplane together. As quickly his thought returned to the fire. "See! the firemen have a net."

This dramatic play was the culmination of interest in building airplanes. The easy satisfaction afforded by using oblong blocks to represent firemen is characteristic of the use of objects at three and four years of age. The essential thing in the play is the flow of imagery connected with airplanes and fire engines.

Blacksmith. — R had never visited a blacksmith's shop, but he had seen pictures of the blacksmith at work, and was familiar with songs and stories describing the work of the blacksmith. He built a shop out of wooden blocks with an anvil in the center of the shop. A man stood beside the anvil. "See his big arm!" said R, pointing to a streak in the

wooden block which he had chosen to represent the blacksmith. His mother pretended not to see the blacksmith's arm. "I'll cut an arm," R said, and slit off a piece of paper, which he added for an arm. "The blacksmith needs a hammer," he said.

This fragmentary knowledge of a blacksmith is rather characteristic of the content of a four-year-old's mind on a subject of which he has only superficial knowledge.

Warships. — 1. R had become interested in pictures of warships, and listened eagerly while he was told a story of one which was fired upon by a submarine. He examined the pictures of the small lifeboats which were launched to hold the crew and passengers saved by the enemy before the boat was sunk. That day he built a big boat to represent a warship and a smaller one to serve as a submarine. On the submarine was a tower (a candle), guns (spools), and cannon (paper wads). The submarine fired cannon at the warship. "Boat on fire!" cried R. "See the fire engines put the fire out!" Three fire engines appeared on the scene to assist the burning boat. To an inquiry concerning the probability of fire engines being used at sea, R paid no attention. He took the crew off the warship and placed them on the submarine.

R felt no sense of incongruity in this representation. Into the construction of the plot went the ideas he had concerning boats and fires. The content of children's minds at four years reveals many inadequate bits of information picked up in a hit-or-miss way.

2. Eight warships were tied loosely together to represent a convoy of boats which R had seen pictured. "In case the Germans come, they are ready to

fight," said he. One lone German confronted this array of boats. The German fired a shot at the boats. "He broke a boat!" said R. "A bad German!"

Here again we see a four-year-old's confused ideas concerning war, and his attempt to picture only the striking features. Boats and a German were the forces to be reckoned with.

Engines. — With his mother's help, R cut from paper the parts of an engine and mounted them on cardboard. He then cut the engine free from the mount and assembled a train which when completed consisted of an engine with bell, whistle, wheels, and smokestack, and six cars constructed out of old envelopes. "You forgot to cut a cowcatcher," said his mother. The engine underwent repairs and emerged with a cowcatcher added to the front. As it ran under a bridge the paper train overturned. "Fix it!" he said. "You are the engineer," his mother replied; "repair it yourself." "I'm going to cut out a fireman," said R, and soon returned with a paper fireman. Cutting two slits in a paper car, he inserted the fireman in the car, saying, "This is the one that shovels the coal." Then, pointing to a place where two other firemen were supposed to stand, he said, "These two firemen tell the train where to go." Throwing two blocks on the floor to represent men, he exclaimed, "See these men tumble! They are going to get run over. We'll catch them on the cowcatcher." "Chu-chu-chu," puffed the train, running over the two men. No attempt was made to rescue these unfortunates. Pointing to another man, R explained, "He is the one who oils the wheels."

Then an iron engine appeared. "Why do engines switch on another track?" he asked. His mother explained this to him. He soon applied the knowledge gained. "This track leads to ——," he said. "See this other track. It leads in a different direction. My engine is switching on this track now." Then his imagination led him far afield. "These men knocked over the train! They are naughty men! Two policemen are coming to lock them in jail. See the policemen taking the men to jail." He carried the two men off and whacked them violently over their heads with a stick. His mother protested, saying, "The policemen would put them in jail." He next dramatized the policeman taking these two men to jail.

R's chief point of interest in this play lay in the manipulation of objects with which he enacted the scenes and events he had connected with trains. He displayed the kind of information usual in the case of a four-year-old who has observed trains only casually.

PART III

MOVEMENT PLAYS OF CHILDREN

CHAPTER XIV

The Meaning and Significance of Movement

Movement a Pleasurable and Necessary Accompaniment of Organic Life. — Movement is "the cry of the being to be," the I AM of the human organism. From birth until death, life goes on in terms of movement. Even in sleep, when the body seems in perfect repose, the motor processes of the internal organs keep up a rhythmic flow of movements. These are reflex and automatic acts, initiated entirely within the nervous system; they are not directly connected with consciousness. Children's enjoyment of movement is seen in their spontaneous expressions of joy in even common forms of motor activity. They like to run in the open with the rush of the wind against their cheeks; they enjoy the "feel" of the water as they wade, swim, or row, and they respond to the rhythmic flow of uniform movement so exhilarating in group games. When we see children running, skipping, and dancing, we see pleasure in movement. Happy laughter accompanies the spinning of tops, rolling of hoops, and throwing of balls. The delight of adolescents in sports of all kinds, ball, croquet, golf, swimming, and dancing, testifies to the continuance of pleasure in movement. Enjoyment in passive motion such as is experienced in swiftly moving automobiles and in sailing, and even in the more active forms like horseback riding, canoe-

ing, and rowing lead to commercialized amusements. Even old age cherishes its mild satisfaction in such motor responses as knitting, rocking, and smoking.

The Physical Basis of Movement. — It is natural for the human organism to move when refreshed, finding pleasure and growth in movement; and as natural for it to be annoyed when obstacles interfere with the direct output of motor energy. This pleasure and annoyance are part and parcel of man's original nature; for the physical basis of movement is instinctive. From birth on the instinct of physical activity shows itself in numerous spontaneous and involuntary movements which involve all parts of the body. That these movements are unlearned, psychologists are practically agreed. Fond parents sometimes speak of teaching a child to walk. They are led to believe that they do so because of the imperfections of the child's first efforts to walk and the gradualness with which walking is established as a habit. What the parents really do is to add social approval to an act initiated from within and accomplished by practice. And so with other motor acts of children: nature sets the time for the act to appear and practice establishes the habit. Without the readiness of the nerves to act, teaching accomplishes nothing.

A Four-Fold Classification of Movement. — Psychologists classify the native tendency toward movement in various ways. The author selects the classification of Norsworthy and Whitley,[1] because it

[1] N. Norsworthy and M. T. Whitley: *The Psychology of Childhood*, p. 42.

affords a practical basis for the consideration of movement plays. This classification involves: (1) movements of gross bodily control; (2) vocalization; (3) visual exploration; (4) manipulation — all of which admit of separate classifications of the movement plays recorded and discussed in succeeding chapters. Examples of (1) would be sitting, standing, walking, running, stooping, jumping, leaping, and crouching; of (2), the babbling of infants and other vocal manifestations out of which language is developed; of (3), which includes among its many phenomena perception of color, form, and brightness, also passive enjoyment in watching movement; of (4), manipulation with such plastic materials as sand and clay.

Is the Need of General Physical Activity Recognized? — Although children under ten years of age are in almost perpetual motion, little allowance seems to be made by parents or by public schools, except in the kindergarten, for a progressive use of activity. One investigator found that the very young child cannot sit motionless more than thirty seconds, nor children from five to ten years for more than one minute and a half. It is difficult for a young child to repress movement, because the nerves which bring on movement ripen before those which control and inhibit movement. Adults, because their nervous systems are adapted to inhibit movement, find it difficult to understand how much energy children consume if compelled to sit still. So important are posture and movement as indicative of nervous condition, that child specialists can read the fatigue or

strength of the nervous system from the gestures, movements, and postures of the body.

Opportunity Should be Supplied for a Rich, Free Motor Development. — What society needs is able-bodied, physically developed children, yet it has never been willing to pay the price for them. Playgrounds are far from universally accessible to children; kindergartens are supplied for only a favored few and many elementary school teachers lack the insight, the equipment, and the flexible program which permit a proper emphasis on physical welfare. Even could the school control entirely the conditions of stimuli, other factors not under the direction of the school might militate against the development of able-bodied children. Heredity and environment are responsible for the kind of nerves and muscles with which the teacher has to deal.

Places for Motor Education: Home, Playground, School. — However, much can be done through a broad motor education in the home, the playground, and the school. It is a commonplace to suggest that every child needs a rich supply of accurate automatisms, but not a commonplace to place the responsibility for acquiring these upon the home until the sixth year. The child learns to walk, run, jump, reach, grasp, and pull, at home; that is, he gains gross control of the large bodily acts involving movements of the trunk, large joints, neck, back, hips, shoulders, knees, and elbows before he comes in contact with public school education.

The nutrition clinics have done much to help provide for child welfare through campaigns enlisting

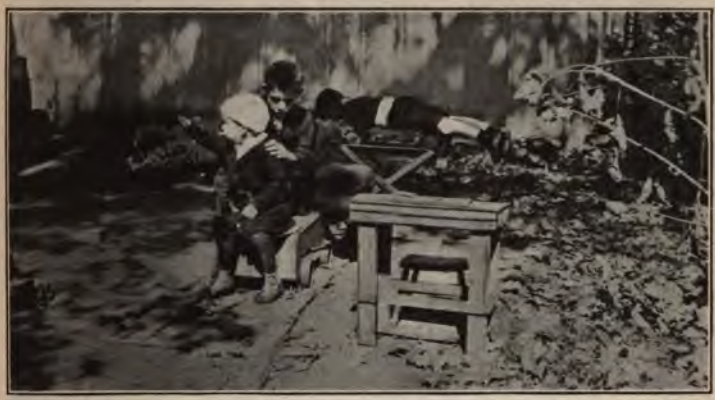
Camp Quanset, South Orleans, Mass.

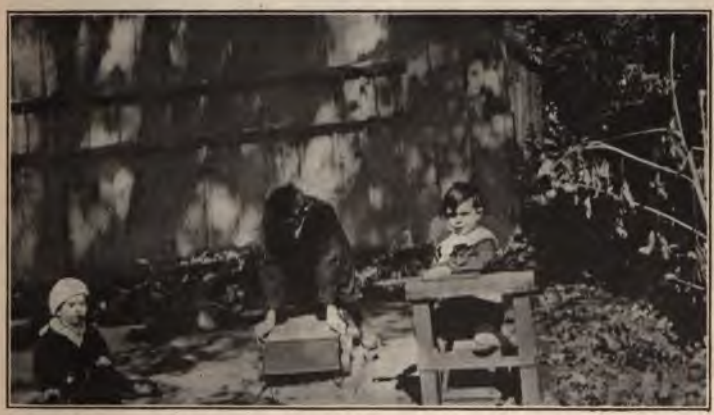
CHILDREN NEED A FULL, RICH MOTOR DEVELOPMENT

the support of the home. Much could be done to enrich the motor activities of children by a similar campaign to promote their play activities in the home. The work of community play leaders under the direction of the National Playground Association is an attempt to accomplish this end through enlisting the aid of mothers. Mothers, as the natural conservers and defenders of childhood, should be taught the fundamental facts regarding the nervous and muscular systems of children. Just a little elementary knowledge would do away with the "sit still" menace. Demonstrations of playground games with or without apparatus would also help.

Household activities afford splendid opportunities for physical development, if used by parents as play activities. Scrubbing, sweeping, and dishwashing are not necessarily irksome tasks to be quickly dispatched. Like woodchopping, milking, churning, and other common chores of country boys, such activities grow tiresome because of the routine, monotony, and repetition which enter into their performance. With little children these acts often partake of the nature of play. It is a well-known fact that the same type of motor energy called into use by these chores could be expended in games and sports with no loss of energy. Nay more, the energy used thus brings exhilaration, zest, and joy to the performers.

Every home should have some kind of crude playground for summer use and indoor apparatus for the winter. Twenty or thirty dollars a year spent on play apparatus proves of more lasting benefit than if





A Playground in the Back Yard

expended on the forms of commercial recreation for which the same amount of money is often spent.

The playground movement has passed through a rapid and extensive development, but even at the present time few cities provide supervision and special teachers for children under ten years of age. Sometime, perhaps, we may arrive at a realization of the fact that it is more important and also more economical to provide for the fundamental needs of young children than to do corrective and preventive work later on.

That the primary school still falls far short of making adequate provision for the physical side of child development is revealed by the long periods spent at the desks, by lack of workshop equipment, and by the scarcity of play apparatus in a vast majority of schools. If the home and school were to coöperate to their fullest extent in physical welfare work, many a child might be spared the handicap of going through life awkward and ill at ease, or lacking those specific skills which adapt him to his environment.

All Motor Education is First Concerned With Inherited Tendencies. — The child's original tendencies to movement come through reflexes, instincts, and inborn capacities. These inherited tendencies to movement are the first concern of teachers of physical education. At first, many of the motor acts resulting from the ripening of inborn connections seem aimless. But they are most significant to him who reads in terms of movements. He who would understand the significance of movement must study the neurological basis for the automatic, reflex, and instinctive acts.

The tendency of modern theory is to depart from the cataloging of instincts as magic potencies which produce certain results in behavior. Instead it recognizes that what were formerly considered instincts are merely more or less specialized responses to certain actual situations, and that educational psychology is concerned with finding out the associations between actual situations and their corresponding thoughts, feelings, and acts.

Is There a Set Order of Muscular Development? — That the fundamental movements dealing with gross bodily control are unlearned has been previously stated as the consensus of opinion of experts. There must, then, be a rough order of development, since no movements can appear until the nerves which initiate them function. As one authority states in substance, these movements must be "blind" and "involuntary" before they can be voluntary, for control is dependent upon the maturing of connections between neurones whose action results in these various movements.[1]

The Doctrine of From Fundamental to Accessory Muscles. — It has been generally accepted that the rough order of muscular development is from fundamental to accessory. This theory, however, has been the subject of much controversy for many years and has been variously interpreted. The writer accepts Shepardson's theory[2] that the voluntary purposive

[1] N. Norsworthy and M. J. Whitley: *The Psychology of Childhood*, p. 43.

[2] Shepardson: *A Critique of the Doctrine of From Fundamental to Accessory.*

control of muscles is from those that are oldest in the race to those that are youngest. This theory is strengthened by an examination of children's play. Kindergartners were among the first to recognize the probability that the order of controlled muscular development is from those muscles that are oldest in the race to those that are youngest and to adapt their materials and plays and games to its practical application. In all children's spontaneous play the larger muscles are the ones used first and most frequently, while the smaller muscles come into action later. And as Shepardson has pointed out, when movements are voluntary, those involving the smaller muscles require more effort than the movements depending upon the larger muscles.

Both Bryan and Hancock have given us some experimental evidence to prove that within a coördinated series of muscles and their movements the progress is from large to small muscles. Bryan's tests of the voluntary control of the muscles of the shoulder-finger series in children from six to sixteen years of age showed that the shoulder muscles have reached the best development and the finger muscles are least coördinated in the sixth year. He found also that the finger muscles gain in rapidity and precision of action after nine or ten years of age.[1] Hancock's tests emphasized the same findings.[2] This evidence is not

[1] Bryan, W. L.: "On the Development of Voluntary Motor Ability," *American Journal of Pedagogy*, Vol. V, pp. 125-204.

[2] Hancock, J. A.: "A Preliminary Study of Motor Ability": *Pedagogical Seminary*, Vol. III, pp. 2-29.

conclusive, because there is no definite period of maturing for the shoulder muscles, which develop rather uniformly up to the sixteenth year with a slightly slower rate than the finger muscles.

The Practical Application of This Doctrine. — The most important practical applications of this theory are probably: (1) the need of providing for the spontaneous practice of all bodily movements before attempting to bring them under voluntary control, and (2) the postponement of movements requiring finer coördinations until they can be most economically used. In regard to the first point we may say with certainty that it is an advantage to allow children to use a new series of movements in spontaneous play, time and time again, before requiring them to make these movements voluntarily. This means an attitude of watchful waiting on the teacher's part. Since she does not know what anatomical concords are present, nor what psychological associations have been built up, she must find out by observation what a child's motor associations are and what experiences lie back of his motor ideas. In regard to the second point, concerning the postponement of movements requiring finer coördinations until they can best be accomplished, it is well to remember that there is an opportune time to teach writing, drawing, clay modeling, sewing, and weaving, as well as an opportune time to teach dancing and swimming. However, that there are exceptions to the rough order of development from fundamental to accessory is borne out by the fact that a few precocious children exist who at an early age perform intricate movements with a

maximum degree of dexterity, and by the fact that infants pick up small objects before they can sit up.

Experimentation Needed to Establish Reliable Theories. — Thorndike has pointed out that the best attitude that the teacher of children from six to twelve years of age can take is to find out, *by trying*, the most economical time to teach the movements she wishes the child to learn and to make sure, again by trying, that the child's health is not impaired. He believes that whether the acquisition of these movements will injure the child cannot be foretold by any theory about the development of the brain by virtue of the inner growth, but must be learned by evidences of brain exhaustion.[1]

Motor and Psycho-motor Tests as a Guide to Motor Development. — Another means of obtaining information in regard to the times in which certain sets of muscles have their intensive period of growth is by motor and psycho-motor tests on selected groups of children. From the motor tests we can find out what children's neuro-muscular, or motor, strength, speed, or steadiness is. From the psycho-motor tests we can discover children's capacity for sensory discrimination and for rapid and accurate intellectual analysis, also their power of adaptation to a novel situation of considerable complexity.[2] The various standard tests used in clinical laboratories are in-

[1] E. L. Thorndike: "The Active Side of Child Life," Notes on Child Study, *Columbia University Contributions to Psychology, Philosophy and Education*, Vol. VIII, No. 24, p. 104.

[2] J. E. W. Wallin: "Age Norms of Psycho-motor Capacity," *Journal of Educational Psychology*, Jan., 1916.

valuable in determining norms or standards for sane and safe procedure. Few tests have been made of motor ability having to do with such muscular acts as the tossing of balls or rolling of hoops. It would be necessary to test several hundred children in order to discover at what age these movements occur most spontaneously. Moreover, if education is to deal with shortening the process of learning in any particular skill the tests would have to show *essential* movements necessary in any given skill, so that teachers could help in the elimination of useless movements.

Known Facts concerning the Order of Development of Muscles and of Movements. — How the different parts of the neuro-muscular system grow and mature is seen roughly through an examination of facts of growth from infancy to maturity. Dearborn's records of L show that her reflex movements on the first day were respiration, sneezing, yawning, grasping with the fingers, pursing of the mouth, sucking, blinking from touch stimulation, and the inhibition of crying through touch stimulation.[1] Warner says that the child at birth may resent an attempt to straighten the flexed elbow. He also points out that when an infant of seven days moves his limbs, fingers, and toes, the movements are slower and more spontaneous than an adult's; that they are uncontrolled by external stimulation, and are not directly useful to the child.

Progress in Babyhood. — We realize that the child's muscular system evidently craves exercise

[1] G. V. N. Dearborn: *Motor-Sensory Development*, p. 2.

sooner than we suspect, for the infant kicks, writhes, and wriggles to an astonishing degree. This is not surprising, since his muscles comprise approximately one fourth the weight of his body.

The writer has condensed a few facts from Warner's account of the further development of muscular movements.[1] When a child is a month old, movements appear in the face, first about the mouth, later in the forehead. The limbs move with more force and begin to effect some mechanical result; that is, an object placed in the hand is grasped by the fingers, and movements of the elbow carry the object to the mouth. When the infant is three months old, we observe some control of his movements through the senses. The head turns toward a bright light, but the hand does not yet move straight toward an object held before it. Later the child transfers an object from one hand to another; as the muscles grow stronger, he holds his head up when the body is supported, and moves his eyes about. At the fourth or fifth month an object seen or heard brings some control to the spontaneous movements. The sight of a ball may stop such movements and lead to the turning of the head and eyes toward the object. Gradually movements follow the external agencies of light and sound, and special combinations of movements lead to voluntary actions.

In regard to the beginnings of volitional control of movements, Vierordt has the following to say: "All indications point to the arm as first becoming obedient to volition, and the sucking movements, too, seem

[1] F. Warner: *The Study of Children*, pp. 41-46.

early to lose their reflex character. Then follow intentional movements of the head and neck and some groups of face muscles, and finally those of the lower limbs, which as late as the sixth month still move in the most haphazard manner."[1]

Progress in Early Childhood. — By the time a child is three years old he runs and talks and chatters. Spontaneous movement continues but action controlled through the senses is established. The child accomplishes the movements necessary for gross bodily control with little training. As soon as the nerves and muscles of the leg are mature he walks. For the child possesses by original nature the tendency to sit, walk, run, and climb, and will perfect these acts through experience. The early movements connected with these acts become reflex through practice and form the basis of the complex actions of adult life. We know little about the order of development of the muscles of the trunk, arms, and legs, but Tyler says that the muscles of the trunk are most advanced at birth; that the arms are in advance of the legs, but that the latter grow more rapidly during childhood. At about four years of age the muscles of the legs begin to gain considerably. According to Tyler we are still much in the dark as to increase of muscular girth, yet it seems probable that the girth of the upper leg increases more rapidly during the first four years, and after this the calf.[2]

[1] K. Vierordt: "Physiologie des Kindesalters," Gerhardt's *Handbuch der Kinderkrankheiten*, Vol. I, p. 181.

[2] J. W. Tyler: *Growth and Education*, chapter ix.

Because each period of pure muscular growth is followed by a craving for exercise, the child walks, runs, climbs, tugs, and pulls when the muscles of the arms, trunk, and legs crave activity. Besides the wide range of spontaneous movements noticeable at three years, we observe many acts which are controlled to a large extent through the senses. The power to carry over into action some considerable time later the impressions gained previously is noticeable before the third year. Every thoughtful mother observes with interest the child's motor reproductions of her own acts at some interval after her own action. In some way the child has secured vivid sensory impressions of her acts and reproduces later the striking motor characteristics of her actions.

Progress in Later Childhood. — Some interesting facts concerning muscular development after the sixth year have been emphasized by observers and experts in childhood education. While the period from seven to nine years is in general a period of slow physical development, called by some authorities a period of regression, by others a period of adjustment, motor activity is even greater than before. Muscular activity is increasing rapidly and must readapt itself to new needs. The muscles tire rapidly and with boys especially the strength of the muscles of the forearm increases more rapidly than the cross-section of the muscles warrants. Movements of the fingers become more skilled during this period, but it is on the whole one of adjustment for the higher motor centers. As Johnson says, "The interest in motor activity is now shifting, as mentioned above, from

interest in activity to interest in result. * * * Details of motor activity are coming into prominence, and interest in skill is developing. With the child's consciousness of increasing power and skill awakens interest in competition. Therefore he begins to play games, that is, to play according to form and rule with other children, whereas, before, his play was largely free, informal, unorganized activity. The child is not yet able to coördinate his activity with that of others, and there are as yet no truly coöperative games. * * * The child's ambition is often quite beyond his skill, but his efforts are worthy of respect and encouragement."[1]

Tyler speaks of the relative decrease in muscular weight and power during this period and mentions that it comes at a time when the muscles are beginning to crave strenuous exercise which makes far greater demands on the heart than mere rapid growth could cause.[2]

Tyler's measurements of muscular girths of arm and leg were taken by different observers from different groups of individuals and are, as he says, hardly comparable. "The arm grows less rapidly than the leg up to about the eighth or ninth year; afterwards the reverse is true. The running period is followed by one of greater use of the arms. During these years the child's greatest interest lies in plays calling into use the muscles of arms and legs. The accelerations in increase of girth of arm and leg occur at fourteen

[1] G. E. Johnson: *Education by Plays and Games*, p. 73.

[2] J. M. Tyler: *Growth and Education*, pp. 140-143.

and sixteen in the boy. But at ten the increase is usually more rapid than we suspect."[1]

These facts concerning motor development up to the tenth year have their significance in motor education in the home, school, and playground. The playground affords perhaps the best opportunity to improve the child's readiness to act, quickness of movement, accuracy, force, persistence, and ability to apply force in proportion to the amount of energy required. But since some of the causes of defective motor ability are disease, uncleanliness, fatigue, and unhygienic conditions, as well as repression, the home has a big task before it in building up a strong neuro-muscular system. The school must cease its old-time policy of repression. Some authorities say that less than one-fourth of the child's school time should be spent in the seat. To neglect to provide the child with free opportunity to run, jump, slide, handle, and investigate during the first ten years of his life is to stunt his development. It is poor economy to neglect his motor education in an attempt to force intellectual growth before the time is ripe for the natural blossoming of the intellectual powers.

The Question of Method in Movement Plays. — Some of the best experts upon the question of method have pointed out the utter futility of explaining to children how to make certain movements they have never chanced to coördinate spontaneously. Only after a child has performed a muscular act can he understand instructions concerning it. The significance of this is that the trial and error method must

[1] *Ibid.*, p. 70.

largely be used in teaching movements, especially with little children, and in the beginning stages of any new muscular development, even with adults. The best procedure is to get the pupil to attempt some movements, experiment a while, and then give suggestions. If left to experiment alone too long, he is in danger of forming bad habits; hence a teacher must be on the alert to detect good variations in experimentation. Trial and error with emphasis on the best variation is the only method which can be relied upon to bring permanent improvement in movements. Ruger says that improvement in habit formation comes through cross-cuts which appear by chance, but should get into attentive consciousness at once.[1] Imitation plays an important part in perfecting the movements, but not in initiating them. At the proper moment the good teacher calls out, "There! you have the right swimming position!" or "That is the best way to bat!", and straightway the performers repeat this chance variation which might have passed unnoticed among many others. Once a performer starts out to acquire skill along a given line, he must be left largely to himself, except for some slight suggestion. A good play leader and a skillful coach never fail to follow up improvement with praise and encouragement. Neuman says in substance that improvement must be a conscious aim of the pupil himself; that the arousal of the will to improve is of fundamental significance in all mental and bodily

[1] H. A. Ruger: "The Psychology of Efficiency," *Archives of Psychology*, No. 15, 1910.

improvement.[1] The change in the attainment of children is marked when their attention is focused on strategic mileposts along the way.

Progress in Learning Not Continuous. — In all attempts to modify movement through instruction it is necessary to bear in mind that progress is not continuous. Growth and improvement are irregular and gradual. The child proceeds for a while in a condition of mental uncertainty until suddenly almost by jumps he arrives at a stage where the desired movements become automatic. These periods of no progress, or "plateaus," are considered by Book to be due to lengthy periods of "lapses in attention, relaxations of interest and effort," and should be overcome.[2]

[1] E. Meuman: *The Psychology of Learning*, p. 362.

[2] W. F. Book: *The Psychology of Skill*, p. 148.

CHAPTER XV

The Value of Games of Skill and of Play Apparatus in Motor Education

Plays and Games of Skill Differentiated from Dramatic Plays. — The significance of dramatic plays in motor education has been fully considered in Part I. In dramatic plays the muscular exercise furnishes only a small part of the pleasure, while perceptual or imaginative or constructive interests furnish the larger part. In plays and games of skill the chief pleasure derived is in voluntary motor achievement.

In a broad classification such as "Movement Plays" it is important to discriminate between a play and a game. Children run, leap, jump, throw, and catch, singly or in pairs, and much of their playful experimentation is not guided by rules, but proceeds according to chance and interest. Whenever their plays are guided by set rules, we have a game as distinguished from a play. It is thus seen that games of skill may occur with or without apparatus and play accessories such as bats, balls, and marbles.

The Genesis of Games of Skill. — A survey of the classification of games of skill discloses the important fact that traditional games of skill as well as traditional dramatic games reveal customs that have come down to us from times when practices were in vogue which had nothing to do with games. Playing at games for stakes involving life or death to the winner or the possession of the loser's property is found to be a

common custom of peoples in widely different environment. The cathedrals, churches, and monastic buildings of the Middle Ages reveal diagrams and plans carved on the walls or floors which show that the boys of the Middle Ages, and probably the monks and shepherds too, indulged in games of skill in which diagrams or plans were used. There is evidence to show that some of the games of handball are outgrowths of divination, and that the ball games played by two opposite parties with bats and sticks have developed from early contests in towns.[1] All play among savages is as close to actual life experience as is the case with children. In the ordeal and the religious plays, and in the gambling games, there is no separation at all. It thus seems evident that games of skill as well as dramatic plays were in origin directly connected with experience, and became unrelated only when conventionalized and handed down by one generation to another as traditional games.

Beginning with simple movement plays characterized by moderate motor activity and little or no organization, such as hoop-rolling, tossing and catching a ball in repetitive fashion, juggling objects on the hands and feet, and balancing objects on the head, we can trace development in organization up to games in which tossing, rolling, and throwing are carried on in an undefined group. Usually one person is a chief performer while others react to his actions. There is often some coöperation from others and some social feeling from the participants.

[1] A. B. Gomme: *Dictionary of British Folk-Lore*, Vol. II, Part I. pp. 471-75.

Progression in the Organization of Games of Skill.—Gradually the group action becomes defined. Everyone playing does the same thing as the others, either simultaneously or successively. And more, each person tries not only to repeat the act, but to perform it more skillfully than it has previously been done. This last type of organization is a real game of skill, for each player is training himself by repetition and effort to compete satisfactorily with others. The method of accomplishing the act has become more important than the act itself. Examples of such games will be found in the records; they include tossing a ball from one to another, throwing at a mark, foot races, contests of strength in carrying and lifting, arching games, ring toss, and many others. A higher type of organization in the games recorded involves games in which two undefined groups play against each other. Here each player must not only govern his own actions by the rules of the games, but he must coöperate with others in so doing. Examples of such games are found in tug-of-war contests and in the various tag games played in pairs. This type of organization is about as high a type as we see develop in the plays of children under ten years of age.

Games of Skill Correlated With Intelligence.—Miss L. Estelle Appleton,[1] in a comparative study of the play activities of adult savages and civilized children, finds that advanced types of games of skill are entirely lacking among the adult Veddahs; that they are almost wholly so among the Central Austral-

[1] L. E. Appleton: *A Comparative Study of the Play Activities of Adult Savages and Civilized Children*, pp. 40-41.

ians; that they are somewhat developed among the Yahgans, more developed among the Bushmen, and comparatively well developed among the Eskimos. She thus draws the conclusion that games of skill occur in increasing numbers among the more highly civilized tribes. She points out the fact that games of skill are really games of practical judgment based upon concrete conditions. They are, therefore, directly correlated with intelligence. Miss Appleton also points out that the general and specialized use of the muscles has a much larger place in the life of the Eskimo than in the other groups. The Eskimo, like civilized children, voluntarily subjects himself to muscular drill and exercise.

Sense Education Through Plays and Games and Experimentation on Apparatus. — Rousseau was one of the first educators to observe that the senses are directly connected with motor activities, with the use of the hands and legs. He stated emphatically that it is not enough to use the senses in order to train them, but that we must learn to judge by their use. He placed great stress on the quality of thinking connected with sense observation, thus making the senses primarily active motor organs. Educators of the present day realize that most of this active sense experimentation goes on through movement plays with or without apparatus. We talk a great deal about the important motor tasks a child must accomplish in early childhood, but we sometimes lose sight of the ways and means he unconsciously adopts (1) to accomplish the reflex movements connected with the spinal cord; (2) to coördinate the muscles of the

trunk, shoulders, and legs as a result of the growth of the cerebellum; and (3) to mature the motor and sensory centers in the cerebrum controlling the heavier and finer muscular adjustments. A child accomplishes these tasks by games of skill and movement plays on such apparatus as swings, slides, and parallel bars. These movement plays stimulate the physical development of the growing body. Many plays afford stimulation for the use of the entire body, while others affect only specialized motor organs such as the hands and legs. The specific skills attained are connected with useful life activities such as reaching, pulling, grasping, walking, hopping, and climbing. The motor tasks set by the children are children's tasks, not adults'. And the situations in which motor education goes on are social situations preëminently suited for development and education.

It is Difficult to Separate Plays and Games Involving the Muscles of the Whole Body from Those Involving only Parts of It. — It would be difficult to separate the plays of skill and competition involving the whole muscular system from the plays involving parts of it. In the first place, only a specialist can know accurately just what parts of the neuro-muscular system are involved in each play. In the second place, even where the chief activity may be located in the arms, hands, or limbs, the muscles of the entire body are often tense and are found to be coöperating through resistance. For example, even the games and contests demanding specialized muscular control such as marbles, juggling, jackstraws, tossing balls, cats' cradle, parchesi, bean bags, roller skates, and bicycling

demand coöperation from other series of muscles than those directly involved. The most important thing to keep in mind is that it has been established beyond question that, when children are left alone to find amusement and exercise as their impulses direct, by far the greater part of their games involve activity of the whole body.[1]

Play Apparatus as a Means of Motor Education. — The value of play apparatus for children under ten years of age is less commonly recognized than the benefit to be derived from plays and games. We are just beginning to realize that play apparatus affords an excellent opportunity for motor education in a social environment. Sometimes the child plays aimlessly and the main benefits derived are improved circulation and respiration. More often he plays to accomplish some objective, such as to slide down the slide backward, or to climb high on the parallel bar fence. In attaining his ends the body is brought into positions and situations that present obstacles, and to overcome these obstacles requires as much thought involving foresight of consequences, comparison, and judgment as is called into play in solving problems in arithmetic or in the study of history and geography.

Practical Judgments Involved in Play with Apparatus. — Many adults lose sight of the fact that the child has consciously to build up the neuro-muscular coördinations involved in reaching, pulling, walking, and running. For example, when he learns

[1] L. E. Appleton: *A Comparative Study of the Play Activities of Adult Savages and Civilized Children*, p. 44.

to walk, his attention is fixed for a while upon the details of the movements. Soon the nerve centers take over the control of the required movements and he is able to make them automatically. He thinks only of the end to be attained, which may be some object to reach, some place at which to arrive. To make the arms and legs move together properly in situations required of him is his chief problem for a number of years. Motor education centers about the acts which make this possible. Play apparatus involves such a wide range of muscular activities that the child experiences no difficulty in constructing plays suitable to his particular needs at a particular time. He plays on the slide one way at three years and another way at six, because even the intervening three years bring marked changes in the needs of his rapidly developing body. To those who feel that apparatus for play is purposeless, the following example may bring a realization of the type of thinking required in bringing about the necessary neuro-muscular coördinations.

A little boy of five years made his first perilous journey down the slide. Clinging to the side railing he let himself be swept downward by the force of gravitation. His little face was all puckered up with anxiety, but this expression changed to delight as he landed safely on the gymnasium mat with only a slight shock. Quickly running back he repeated the feat over and over again, changing the rapidity of his descent by strength of grip. At last he dared to make the journey downward without holding on. Having mastered this problem, he began to experi-

ment in other ways. One day he noticed another boy sliding downward in a swimming position, without touching his hands or feet to the side railing. The first time he tried to imitate this act, he failed to get the right position, and, not trusting himself, caught hold of the side railing several times. After much selection of means and ends, a process in which mind and muscle worked out the problem, he made the descent much as the other boy had made it, then repeated the act several times with evident enjoyment. To a careful observer the thinking process involved in these acts was none the less important because the end was reached by means of the whole body.

Summary of the Values of Plays and Games of Skill and Experimentation with Play Apparatus. — It is apparent, then, that both plays and games of skill and experimentation with play apparatus bring the body into positions and situations presenting obstacles the overcoming of which brings progressive control of the neuro-muscular system; that the method of gaining control involves foresight of consequences, and practical judgment; that these plays afford stimulation for the use of the whole body as well as for parts of it; that the specific skills attained are connected with useful movements such as reaching, pulling, walking, running, and climbing; that the situation in which motor education goes on is a social situation, especially suited for the development of small children.

CHAPTER XVI

Movements of Gross Bodily Control: Kicking, Creeping, Climbing, Walking, Running, Skipping, Leaping, and Jumping Plays

Movements Preparatory to Creeping and Hitching. — This group of movement plays is one of the first to develop in early infancy, inasmuch as through combinations of kicking, rolling, hitching, creeping, and walking the child soon learns to propel himself toward coveted objects and places. The infant's spontaneous kicking plays an important part in strengthening his muscles of the trunk and limbs for the later activities of creeping and walking. Froebel points out the part a wise and loving mother can take in the motor education of her child by playfully responding to his spontaneous kicking movements. Raising the body and learning to sit upright is usually accomplished by the child at about six months. That this is a pleasurable achievement is evidenced by the signs of exhilaration accompanying its performance. Not many months later, a child seated on the floor rolls, tips, or hitches toward an object he desires. Mrs. Tilley's records show the development of these spontaneous movements. (182d day.) "This afternoon he (the first child) was sitting on the floor, and when his plaything rolled away from him, he rolled over on his stomach and crept after it." (199th day.) "The second child, when lying down, rolls

vigorously toward an object near by. If sitting up, he will reach, topple over, and reach till he gets the object."[1]

A study of 150 children, males and females equally divided, showed that 60 per cent. crept, 30 per cent. moved along by hitching, 7 per cent. moved by rolling, and 3 per cent. moved by crawling, "swimming," or some other means peculiar to the individual.[2] Of the development of creeping, the following description by Sigismund gives an illuminating account:

Creeping. — "It is a treat to watch a creeping child. The tiny creature, seated on the floor, longs for something beyond his reach; straining to get it he loses his balance and falls over. In that position he still reaches out his hand, and notices that he is nearer the object of his desire, and that a few more such forward movements would attain it. Soon he becomes more active, sure, and courageous, and learns to maintain his center of gravity on three supports while he lifts the fourth member for his next step forward; for at first the child raises but one limb at a time, though he soon learns to use the right hand and left foot together. I have never seen one so use the hand and foot on the same side. Sometimes the child crawls backward like a crab, even when there is nothing before him which he wishes to shun."[3]

[1] L. E. Tilley: "The Development of Two Baby Boys," *Association of Collegiate Alumnae Publications*, 1910-11, p. 54.

[2] A. W. Trettien: "Creeping and Walking," *American Journal of Psychology*, Vol. XII, p. 31.

[3] K. Groos: *The Play of Man*, p. 79.

Hitching. — I once observed closely for a period of several days the efforts of one child learning to hitch. The child reached out for an object just beyond his grasp; failing to get it, he rolled over accidentally and found himself in a position to reach the coveted object. A couple of days later, he stretched his arms out toward an object and tipped over several times in succession, finding himself three feet away from the place in which he had started. Ten days after this he had acquired a uniform position for these excursions toward objects; placing both hands together on the floor he raised his trunk up and forward, pushing in oar-like fashion with his right leg. Soon he had acquired considerable skill in scuttling frog-like over the floor, often choosing favorite places to journey toward, or following the various members of the family about.

Learning to Walk. — With the same child, walking was accidentally and mechanically induced when a low taboret beside which he was standing slid several feet on a waxed floor, pulling him along with it. Frightened, but holding on to the taboret, he went mechanically through the semblance of walking. A few days later he voluntarily took several steps from a chair to a near-by table. Walking proper, however, appeared quite suddenly and unexpectedly. Standing beside a chair R walked confidently across the room, crept back to his starting point, and walked across again, turning to walk in another direction. Soon he was heard walking in the next room. Following, I saw him creep back to the window-seat and make several futile attempts to cross the room. His entire

being revealed signs of exhilaration and excitement; his face was pink and glowing with pride, his arms slightly outstretched, and his legs spread far apart to aid in balancing his trunk, while his breathing was rapid and slightly labored. The following day he

WALKING IS A MECHANICAL PROBLEM AT FIRST

started the same experimentation in the same room, going over and over the identical course where he had achieved a victory the preceding day.[1]

Walking a Mechanical Problem Until the Third Year. — Walking remains a mechanical problem until

[1] From the author's unpublished records.

about the third year. Until the seventh year the torso is heavy in proportion to the legs; because of this the legs tire from supporting it. The child quite unconsciously throws himself down flat and rolls and tumbles about, recuperating for further effort.

The Parallel Bar Fence. — To protect the child from undue strain, Montessori advocates the use of several pieces of apparatus, the spontaneous use of which exercises the limbs while allowing some support of the weight of the torso to fall upon the arms. One of these pieces of apparatus, a parallel bar fence, deserves special mention in connection with walking plays. The writer has tried an adaptation of this fence with good results. It consists of two hardwood poles, eight feet long, which fit into a series of holes in two upright posts supported by a heavy base four inches wide. Little tots walk sideways along this base while clinging to the pole above. In this way they exercise the muscles of the legs, trunk, and arms, without throwing the entire weight of the torso on the legs, where constant strain of this kind should be avoided. The older children enjoy performing feats on the upper bars over a gymnasium mat and use it in games of skill and dramatic games which they invent.

Walking Boards. — To meet children's tendency to walk on curbings, fences, and, in unguarded moments, along precipices or railroad tracks, several types of walking boards were introduced into the Pittsburgh playrooms and playgrounds for small children. For children under four years, the boards used were twelve feet long and five inches wide. They were elevated from the floor by three-inch blocks

nailed securely underneath. Narrower boards, more highly elevated, were used for children up to seven years old, while joists were found suitable for the use of children above seven years.

Walking on Stilts, Snow Shoes, or Skis. — Any careful student of spontaneous play can observe a large number of walking plays in which children invent mechanical obstacles to add zest to walking. One small boy when only two years of age delighted to strut about in his father's bath slippers. At another time he was seen paddling about with his feet encased in coffee cans. After watching boys ski, he was observed to slide about on some smooth boards with considerable enjoyment. He soon acquired skill in skating on these boards without losing the hold of his feet on the boards. Walking on stilts is an experience every boy or girl enjoys sometime during childhood. With the increased height stilts afford it is pleasant to strut about, reveling in the power to control the new instrument of locomotion. Walking on snow-shoes and skiing are delightful sports in childhood; and justly so, for to exhilaration from the effort of movement is added pleasure in swift gliding motion.

Hopping and Skipping are Natural Variations of Walking Plays. — Hopping and skipping are as much a part of the walking plays of children as leaping and galloping are native to young animals. The writer has seen children, just learning to walk, take a sudden leap or several running steps. It is almost as if for sheer joy of living their bodies bounded forward and upward. In these movements the body is suspended in the air for an instant. In the skipping and hopping

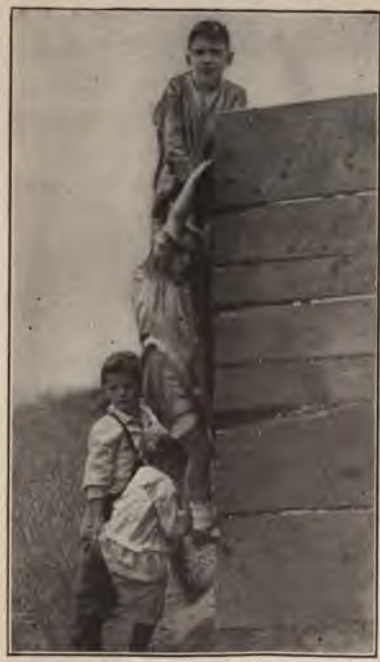
movements so common to children, one foot at a time is thrust forward and is sustained by a hop on the same foot. Some children find it difficult at first to alternate the feet in skipping, and drag one foot back of the one they thrust forward. The skip gives us the beginning of a gallop and the principle of the waltz. There are games in which children skip or hop to accomplish some end, such as in Skip Tag or Hop Scotch. A few games demand a forfeit if the skip step is lost during the performance of some feat.

Running. — From the second year on, the child takes great pleasure in running. Left on his own devices out-of-doors, a normal child of two or three years spends much of his time running actively about from place to place. While these journeys are largely induced by curiosity about new sights or sounds, a large part of the pleasure results from joy in the exercise itself.

Running Plays and Games. — Running plays and games appear just after the time of acceleration in growth of the muscles of the legs. The period from seven to nine years is regarded by most authorities as the time for the greatest interest in running games. Boys' interest in such games continues high and reaches its greatest development at the age of ten to twelve, while girls' interest in running games is far below that of boys and declines rapidly after the eighth year. When running becomes no longer an end in itself but a means to the accomplishment of an end, we have the beginning of a game of skill. Such games are Puss in the Corner, Follow the Leader, Going to Jerusalem, Ruth and Jacob, How Many

Miles to Babylon, Hill Dill, Drop the Handkerchief, Black and White, Bull in the Ring, one- and three-legged races, and wheelbarrow races.

Climbing. — Although climbing has been mentioned with creeping and jumping plays in connection with which it first appears, other aspects of it deserve special mention. Groos asserts that climbing is probably the outcome of a special instinct.[1] Thorndike lists climbing and sitting, running, stooping, jumping, leaping, dodging, and other movements as ones that he considers unlearned.[2] Opinions can be cited to support the opposite view also in the case of climbing. It is outside the province of this book to enter into a discussion of this point. However, the writer's observations of children's spontaneous play seem to indicate the unlearnedness of this tendency. Whichever viewpoint we subscribe to, the

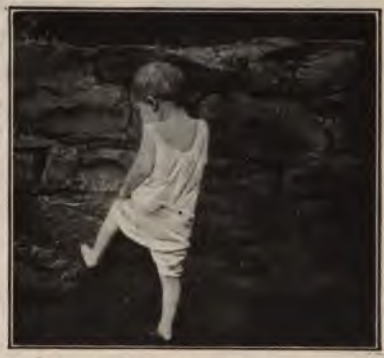


SPONTANEOUS CLIMBING

[1] K. Groos: *The Play of Man*, p. 87.

[2] E. L. Thorndike: "The Original Nature of Man," *Educational Psychology*, Vol. II, pp. 47-49.

practical considerations as to the place and value of climbing in motor education remain of paramount significance. We do not need to be culture-epoch theorists to believe in the value of climbing to stimulate good circulation and to improve lung capacity, as well as to build up the muscles of the trunk and limbs.



SPONTANEOUS CLIMBING

Robinson called our attention to the fact that a newborn infant was able to cling by his hands, sustaining his weight. Even casual observers note the way a baby in arms climbs upon his mother's breast and pulls himself up to her lap from the floor. As soon as he learns to creep, climbing upon low boxes and upstairs is a daily pastime.

When the time comes in which a boy braves danger to climb high trees, or scale low buildings, rocks, and cliffs, parents and teachers should know what to substitute for these hazardous undertakings.

Realizing from an exhibition of such adventurous climbing that the youth longs for an opportunity to measure his strength against something, we may devise play apparatus which will call forth from the boy the spirit of adventure and desire for prowess. The climbing rope affords children under ten years of age abundant opportunity to gain skill in climbing and

subjects them to none of the hazards they meet in promiscuous climbing on fire-escapes and dangerous buildings. A climbing rope may be purchased from any dealer in athletic supplies or made by suspending a strong rope knotted at the bottom from a strong, closed iron hook. The children like to pull themselves up and down the rope and to swing back and forth. As they gain power in prehension they try new stunts by swinging from the rope to a low trapeze which can be placed near by, or by swinging and jumping to the ground. Many dramatic games such as fireman and life saver are enacted on these two pieces of apparatus.

Boys from eight to ten years of age enjoy playing part of the time on the boys' separate playground where teeter ladders and high apparatus permit more venturesome climbing and sliding. Many common types of climbing apparatus would be too dangerous for a small playground for small children.

Jumping. — Pleasure in jumping comes not only from the free and swift movement downward, but from a certain glory in achievement. Jumping and climbing plays appear almost simultaneously. Children learn to jump in connection with early efforts in climbing.

One child two years old considered jumping from a footstool a great achievement. He would run to his parents before each jump exclaiming, "Dump down, dump down!" He also enjoyed jumping downstairs, step by step. Soon the window seat was the scene of new conquests. He also climbed upon a three-foot embankment, then half slid, half jumped, down its

grassy slope. Anyone who observes children's spontaneous play notes how early competition enters into their climbing and jumping activities. "I can jump farther than you!" is a common boast. The kindergarten has utilized leaping and running and jumping in many of its plays and games. Circus horses leap, run, and jump over brooms held higher and higher. Trick dogs and ponies perform many familiar operations. Later these movements are utilized in rhythms.

Montessori invented a piece of apparatus adapted for the broad jump.[1] It consists of a low wooden platform painted with various lines by means of which the distance jumped may be gauged. There is a small flight of stairs which may be used in connection with the platform, making it possible to practice and to measure the high jump. The writer has found the adjustable stairs belonging to the playroom slides fully as satisfactory as the Montessori apparatus. The children mark off distances on the ground and derive much pleasure from measuring one another's jumps. The springboard used in gymnasiums can be built specially for little children's play. It should be lighter and more flexible and should have a longer slope. If it is placed in the middle of the room the children run and jump various distances from it on to the gymnasium mat. They like also to stand on the highest point of the springboard and jump up and down. Various dramatic games such as train and life savers and boat plays take place on this piece of apparatus.

[1] M. Montessori: *The Montessori Method*, p. 143.

Records of Kicking, Creeping, Walking, Skipping, Running, Leaping, and Jumping Plays

1. **Sliding Over the Floor.** — In the playroom, knotted ropes suspended from the ceiling stimulate babies, not yet able to walk, to propel themselves over the floor. They hold on to the rope and slide gaily back and forth.

2. **Creeping and Pushing Plays.** — Creeping or hitching, while holding on to chairs which are pushed along the floor, is a locomotive play which all babies enjoy and one which leads to creeping. Babies also creep along the floor while pushing toys on wheels.[1]

3. **Pushing and Walking Plays.** — In the playroom, children just learning to walk support part of their weight on chairs, go-carts, or wagons and thus practise walking. Grasping the ledge of the sand bin with their hands, they take first steps along it, often pushing the weight of the body along with their arms.

4. **Walking in Water.** — In the city playgrounds the children derive great pleasure in wading, running, and leaping about in the shallow water of the wading-pools. The water resists their efforts slightly, thus giving them a sense of power which, coupled with the exhilaration produced by contact with the water, makes wading an agreeable pastime.

5. **Experimentation on the Walking Board or the Ledges of the Sand-box.** — Little tots straddle the board, walking forward and backward, sometimes racing.

[1] See sliding plays.

6. **Walking on Paths or Chalk Lines.** — Walking contests take place on the chalk lines of the tennis court. The children collect blocks or stones and arrange them in straight or circular paths, sometimes in concentric circles. They walk cautiously on these paths of blocks, endeavoring not to make a misstep. Some children invent paths showing contrasts of long and short steps on which they play leaping and running games.

7. **Walking Races.** — Children from seven to nine years of age enjoy walking and running contests in which they race for goals, carrying empty buckets on their heads or pushing wheelbarrows. They also enjoy potato races, three-legged races, and flag relay races.

8. **Running Games.** — Children from two and a half to four years old enjoy such simple running games as Hill Dill, Tag, and Pussy Wants a Corner. Children of kindergarten age enjoy more complex running games, examples of which are Ruth and Jacob, Skipping or Running Tag, Follow the Leader, and Going to Jerusalem. From the seventh to the ninth year the running games are especially interesting because of problems of skill which they present. Japanese Tag, Double Tag, Fox and Chickens, Three Deep, and Chariot Race are examples of games involving increasing problems of skill.

9. **Jumping Plays.** — Babies two and a half years old enjoy jumping from boxes or low chairs. Jumping soon becomes diversified even with small children. On the playground the steps of the slide become the scene for various jumping contests. There are the

Records of Kicking, Creeping, Walking, Skipping, Running, Leaping, and Jumping Plays

1. **Sliding Over the Floor.** — In the playroom, knotted ropes suspended from the ceiling stimulate babies, not yet able to walk, to propel themselves over the floor. They hold on to the rope and slide gaily back and forth.

2. **Creeping and Pushing Plays.** — Creeping or hitching, while holding on to chairs which are pushed along the floor, is a locomotive play which all babies enjoy and one which leads to creeping. Babies also creep along the floor while pushing toys on wheels.[1]

3. **Pushing and Walking Plays.** — In the playroom, children just learning to walk support part of their weight on chairs, go-carts, or wagons and thus practise walking. Grasping the ledge of the sand bin with their hands, they take first steps along it, often pushing the weight of the body along with their arms.

4. **Walking in Water.** In the city playgrounds the children derive great pleasure in wading, running, and leaping about in the shallow water of the wading-pools. The water resists their efforts slightly, thus giving them a sense of power which, coupled with the exhilaration produced by contact with the water, makes wading an agreeable pastime.

5. **Experimentation on the Walking Board or the Ledges of the Sand-box.** — Little tots straddle the board, walking forward and backward, sometimes racing.

[1] See sliding plays.

6. **Walking on Paths or Chalk Lines.** — Walking contests take place on the chalk lines of the tennis court. The children collect blocks or stones and arrange them in straight or circular paths, sometimes in concentric circles. They walk cautiously on these paths of blocks, endeavoring not to make a misstep. Some children invent paths showing contrasts of long and short steps on which they play leaping and running games.

7. **Walking Races.** — Children from seven to nine years of age enjoy walking and running contests in which they race for goals, carrying empty buckets on their heads or pushing wheelbarrows. They also enjoy potato races, three-legged races, and flag relay races.

8. **Running Games.** — Children from two and a half to four years old enjoy such simple running games as Hill Dill, Tag, and Pussy Wants a Corner. Children of kindergarten age enjoy more complex running games, examples of which are Ruth and Jacob, Skipping or Running Tag, Follow the Leader, and Going to Jerusalem. From the seventh to the ninth year the running games are especially interesting because of problems of skill which they present. Japanese Tag, Double Tag, Fox and Chickens, Three Deep, and Chariot Race are examples of games involving increasing problems of skill.

9. **Jumping Plays.** — Babies two and a half years old enjoy jumping from boxes or low chairs. Jumping soon becomes diversified even with small children. On the playground the steps of the slide become the scene for various jumping contests. There are the

Records of Kicking, Creeping, Walking, Skipping, Running, Leaping, and Jumping Plays

1. **Sliding Over the Floor.** — In the playroom, knotted ropes suspended from the ceiling stimulate babies, not yet able to walk, to propel themselves over the floor. They hold on to the rope and slide gaily back and forth.

2. **Creeping and Pushing Plays.** — Creeping or hitching, while holding on to chairs which are pushed along the floor, is a locomotive play which all babies enjoy and one which leads to creeping. Babies also creep along the floor while pushing toys on wheels.[1]

3. **Pushing and Walking Plays.** — In the playroom, children just learning to walk support part of their weight on chairs, go-carts, or wagons and thus practise walking. Grasping the ledge of the sand bin with their hands, they take first steps along it, often pushing the weight of the body along with their arms.

4. **Walking in Water.** — In the city playgrounds the children derive great pleasure in wading, running, and leaping about in the shallow water of the wading-pools. The water resists their efforts slightly, thus giving them a sense of power which, coupled with the exhilaration produced by contact with the water, makes wading an agreeable pastime.

5. **Experimentation on the Walking Board or the Ledges of the Sand-box.** — Little tots straddle the board, walking forward and backward, sometimes racing.

[1] See sliding plays.

6. **Walking on Paths or Chalk Lines.** — Walking contests take place on the chalk lines of the tennis court. The children collect blocks or stones and arrange them in straight or circular paths, sometimes in concentric circles. They walk cautiously on these paths of blocks, endeavoring not to make a misstep. Some children invent paths showing contrasts of long and short steps on which they play leaping and running games.

7. **Walking Races.** — Children from seven to nine years of age enjoy walking and running contests in which they race for goals, carrying empty buckets on their heads or pushing wheelbarrows. They also enjoy potato races, three-legged races, and flag relay races.

8. **Running Games.** — Children from two and a half to four years old enjoy such simple running games as Hill Dill, Tag, and Pussy Wants a Corner. Children of kindergarten age enjoy more complex running games, examples of which are Ruth and Jacob, Skipping or Running Tag, Follow the Leader, and Going to Jerusalem. From the seventh to the ninth year the running games are especially interesting because of problems of skill which they present. Japanese Tag, Double Tag, Fox and Chickens, Three Deep, and Chariot Race are examples of games involving increasing problems of skill.

9. **Jumping Plays.** — Babies two and a half years old enjoy jumping from boxes or low chairs. Jumping soon becomes diversified even with small children. On the playground the steps of the slide become the scene for various jumping contests. There are the

Records of Kicking, Creeping, Walking, Skipping, Running, Leaping, and Jumping Plays

1. **Sliding Over the Floor.** — In the playroom, knotted ropes suspended from the ceiling stimulate babies, not yet able to walk, to propel themselves over the floor. They hold on to the rope and slide gaily back and forth.

2. **Creeping and Pushing Plays.** — Creeping or hitching, while holding on to chairs which are pushed along the floor, is a locomotive play which all babies enjoy and one which leads to creeping. Babies also creep along the floor while pushing toys on wheels.[1]

3. **Pushing and Walking Plays.** — In the playroom, children just learning to walk support part of their weight on chairs, go-carts, or wagons and thus practise walking. Grasping the ledge of the sand bin with their hands, they take first steps along it, often pushing the weight of the body along with their arms.

4. **Walking in Water.** — In the city playgrounds the children derive great pleasure in wading, running, and leaping about in the shallow water of the wading-pools. The water resists their efforts slightly, thus giving them a sense of power which, coupled with the exhilaration produced by contact with the water, makes wading an agreeable pastime.

5. **Experimentation on the Walking Board or the Ledges of the Sand-box.** — Little tots straddle the board, walking forward and backward, sometimes racing.

[1] See sliding plays.

6. **Walking on Paths or Chalk Lines.** — Walking contests take place on the chalk lines of the tennis court. The children collect blocks or stones and arrange them in straight or circular paths, sometimes in concentric circles. They walk cautiously on these paths of blocks, endeavoring not to make a misstep. Some children invent paths showing contrasts of long and short steps on which they play leaping and running games.

7. **Walking Races.** — Children from seven to nine years of age enjoy walking and running contests in which they race for goals, carrying empty buckets on their heads or pushing wheelbarrows. They also enjoy potato races, three-legged races, and flag relay races.

8. **Running Games.** — Children from two and a half to four years old enjoy such simple running games as Hill Dill, Tag, and Pussy Wants a Corner. Children of kindergarten age enjoy more complex running games, examples of which are Ruth and Jacob, Skipping or Running Tag, Follow the Leader, and Going to Jerusalem. From the seventh to the ninth year the running games are especially interesting because of problems of skill which they present. Japanese Tag, Double Tag, Fox and Chickens, Three Deep, and Chariot Race are examples of games involving increasing problems of skill.

9. **Jumping Plays.** — Babies two and a half years old enjoy jumping from boxes or low chairs. Jumping soon becomes diversified even with small children. On the playground the steps of the slide become the scene for various jumping contests. There are the

Records of Kicking, Creeping, Walking, Skipping, Running, Leaping, and Jumping Plays

1. **Sliding Over the Floor.** — In the playroom, knotted ropes suspended from the ceiling stimulate babies, not yet able to walk, to propel themselves over the floor. They hold on to the rope and slide gaily back and forth.

2. **Creeping and Pushing Plays.** — Creeping or hitching, while holding on to chairs which are pushed along the floor, is a locomotive play which all babies enjoy and one which leads to creeping. Babies also creep along the floor while pushing toys on wheels.[1]

3. **Pushing and Walking Plays.** — In the playroom, children just learning to walk support part of their weight on chairs, go-carts, or wagons and thus practise walking. Grasping the ledge of the sand bin with their hands, they take first steps along it, often pushing the weight of the body along with their arms.

4. **Walking in Water.** — In the city playgrounds the children derive great pleasure in wading, running, and leaping about in the shallow water of the wading-pools. The water resists their efforts slightly, thus giving them a sense of power which, coupled with the exhilaration produced by contact with the water, makes wading an agreeable pastime.

5. **Experimentation on the Walking Board or the Ledges of the Sand-box.** — Little tots straddle the board, walking forward and backward, sometimes racing.

[1] See sliding plays.

6. **Walking on Paths or Chalk Lines.** — Walking contests take place on the chalk lines of the tennis court. The children collect blocks or stones and arrange them in straight or circular paths, sometimes in concentric circles. They walk cautiously on these paths of blocks, endeavoring not to make a misstep. Some children invent paths showing contrasts of long and short steps on which they play leaping and running games.

7. **Walking Races.** — Children from seven to nine years of age enjoy walking and running contests in which they race for goals, carrying empty buckets on their heads or pushing wheelbarrows. They also enjoy potato races, three-legged races, and flag relay races.

8. **Running Games.** — Children from two and a half to four years old enjoy such simple running games as Hill Dill, Tag, and Pussy Wants a Corner. Children of kindergarten age enjoy more complex running games, examples of which are Ruth and Jacob, Skipping or Running Tag, Follow the Leader, and Going to Jerusalem. From the seventh to the ninth year the running games are especially interesting because of problems of skill which they present. Japanese Tag, Double Tag, Fox and Chickens, Three Deep, and Chariot Race are examples of games involving increasing problems of skill.

9. **Jumping Plays.** — Babies two and a half years old enjoy jumping from boxes or low chairs. Jumping soon becomes diversified even with small children. On the playground the steps of the slide become the scene for various jumping contests. There are the

high jump forward, the long jump forward, the long jump backward, and other variations. In spontaneous home play children practice jumping over boxes, fences, puddles of water, and logs. On the playground they run and jump over piles of blocks or a pole held at various heights. They practice also jumping on one foot or on both feet, and enjoy the squatting and leaping jump.

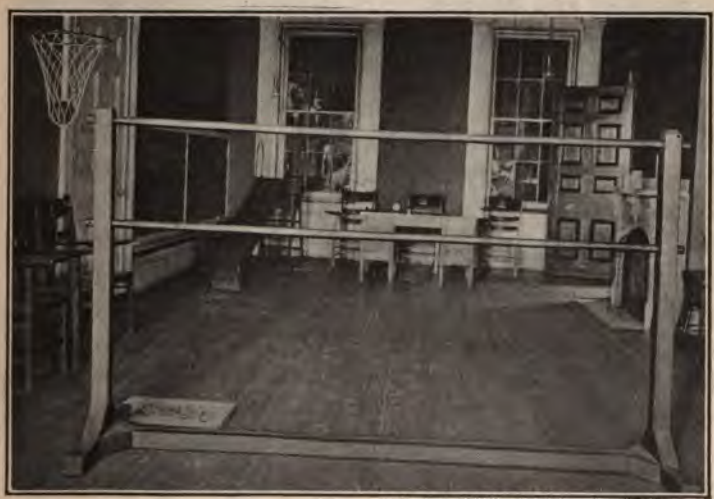
10. **Leaping and Jumping Games.** — Leap Frog and Hop Scotch are familiar examples of this type of game.

11. **Climbing Plays.** — Climbing upstairs proved an engaging occupation the first day it occurred in one child's life, as the following record shows: "One day R climbed up two stairs and, looking slightly frightened, stepped slowly down, one step at a time. Nothing daunted, he repeated the climbing, reaching a higher place on the stairs, but tumbling down with some force. However, he continued to climb again and again, twenty times in all, until by dint of perseverance he reached the top of the stairs. By this time he had acquired a method of getting down; seated on one step he slid down to the next, falling with a slight jar on each step." "During house cleaning, a step-ladder offered the boy, then two and a half years old, an opportunity to climb and look down on his surroundings. Joyously he repeated his journey again and again, accompanying each trip with the words, ''Imb up the ladder!' "[1]

When the writer was about eight years old she remembers distinctly paying a visit to a logging

[1] From the author's unpublished records.

community where it was her delight to walk and run along the piles of logs, jumping from log to log and climbing as high as she dared. Boys and girls in the city climb high fences and walk along them with great agility. On the playgrounds, children climb up the ladders of the slides, pull themselves up the knotted climbing rope, and if allowed in the older girls' playground, pull themselves up on the traveling rings, teeter ladder, parallel bars, and other pieces of apparatus.



School of Childhood, University of Pittsburgh

THE PARALLEL-BAR FENCE

An Analysis of Selected Games of Skill Involving Kicking, Running, Skipping, Leaping, and Jumping Movements

The following games represent only a few of the best known games of skill. They are presented rather for the purpose of illustrative analysis than as a list to be used.[1]

1. **Iron Gates.** — Children in a circle clasp hands firmly and resist the efforts of one in the center who tries to break through their "Iron Gates." The chief enjoyment consists of efforts at resistance.

2. **Cat and Mouse.** — A circle is formed and the child selected to be the mouse stands within it. Another player, the cat, stands outside. The object of the game is for the cat to catch the mouse. The children in the circle assist the mouse by letting her out or in the circle at any time, but the cat is hindered as much as possible by the children's tightly clasped hands. The game can be made a more difficult game of skill by selecting two slow runners for cats and one swift runner for the mouse. The chief interest is in making movements of strategy and in coöperation, force, and agility.

3. **Jump the Shot.** — A rope with a bag of shot attached to one end is swung under the feet of a circle of players by one player who stands in the center of the circle, the players jumping as it approaches. Whenever a player fails to jump over the rapidly moving rope, he is dropped out of the circle. The

[1] See Zach McGhee's analysis of games: "A Study in the Play Life of Some South Carolina Children," *Pedagogical Seminary*, Vol. VII, pp. 469-478.

center player can vary the game by increasing the speed of his movements and by raising the rope higher and higher as he swings it. The chief interest is in agility in jumping, in surprise, and in rivalry.

4. **Rabbit's Nest.** — Groups of four children form rabbits' nests with an additional child as a rabbit in the center of each nest. Two other children are selected, one to be an extra rabbit, the other the farmer's dog. Whenever the extra rabbit invades a nest the rabbit there is forced to leave and find another nest. When the rabbit is caught the dog becomes a rabbit and the rabbit a dog. This game is very popular with children between seven and nine years of age. The chief interest is in gaining skill in running and chasing, in suspense, and in coöperation.

5. **Skip Tag.** — One child skips around a circle and tags another child's outstretched hands; the child tagged skips after the first child, endeavoring to overtake and tag him before he reaches the place of the one tagged. The chief interest lies in the activity of skipping and the added enjoyment of being chosen.

6. **Dodge Ball.** — Half of the players form a large circle and the other half stand within it. The players forming the circle have a basket ball and try to hit the "Dodgers" within. When one is hit he drops out. When the last one is hit those in the circle take the place of the "Dodgers." The chief interest is in gaining skill and agility in throwing and dodging and in rivalry and competition.

7. **Walking to Jerusalem.** — Chairs are placed in a row facing alternately right and left, the number of chairs being one less than the number of children. All

the children march around until the music stops; then they try to get a seat. One is left out each time, and must stop playing, and remove a chair. The child who succeeds in securing the last seat has "walked to Jerusalem." This game is greatly enjoyed because of the strategy of *walking for the purpose* of seizing a chair. Suspense and surprise also give point and zest to the game.

8. **Goosie, Goosie, Gander.**—The geese are placed at one goal and a fox at another. After the rhyme is repeated the geese leave their base for the other, endeavoring not to be caught. The first one caught becomes the fox. The chief enjoyment is in chasing and running. Enjoyment in rhythmic repetition of the rhyme is noticeable, as is the development of agility through rivalry.

9. **Pig in the Pen.** — One child is a pig in a pen made by the other children joining hands around him. The pig tries to escape under the hands. The chief enjoyment is in physical strength, agility gained in opposition, and coöperation.

10. **Wheelbarrow Race.** — The racers stand in twos at the starting line. One, the wheelbarrow, puts his hands on the floor, and the other lifts the wheelbarrow's feet. At the signal "Go," the teams race for an opposite goal. The first crossing the line wins. The chief interest is in competition in running; emulation, pride in achievement, and coöperation in pairs are also important elements.

11. **Pussy Wants a Corner.**—Each child has a corner except the "kitty." The ones occupying corners exchange places. Kitty tries to get the corner temporarily

unoccupied. The child left out becomes "kitty." The chief enjoyment is in running, rivalry, and surprise.

12. **I Spy.** — One child, a "spyer," stands at a base and closes his eyes while the others run and hide. Then the spyer tries to spy the other children, who try to return and touch base without being spied. The chief enjoyment is in running and chasing, in surprise, and in being "it."

13. **Tag.** — One child tags another, and then runs to avoid being tagged in return. The chief interest is in running and chasing, in agility, and in rivalry.

14. **Wrestling.** — The chief enjoyment lies in the consciousness of physical strength and in acquiring agility through opposition.

15. **Drop the Handkerchief.** — Players stand in a circle. One runs behind the others' backs and surreptitiously drops a handkerchief behind a child. That child picks it up quickly and then chases to his place the one dropping it, endeavoring by strategy to get there first. The chief interest is in running, surprise, strategy, and favoritism.

16. **Baseball.** — Played by rule. Chief interest in running, unusual activity, dexterity, rivalry, and coöperation.

17. **Hop Scotch.** — Played on a court marked off in rectangular spaces. A block or chip is thrown into the spaces in regular order and kicked out by a player who hops on one foot. Chief interest is in hopping in this unusual fashion, in dexterity, and in rivalry.

18. **Bull in the Ring.** — A circle is formed about the bull by all the children hand in hand. The bull stands in the center and tries to break through the

ring. If he is successful, all give chase, the one catching him becoming the next bull. Sometimes the bull, before attempting to break through, asks of each pair holding hands, "What is this?", to which various answers are given, as "iron," "silver," "gold." Chief interest is in physical force, running, and chasing.

19. **Leap Frog.** — One child stoops and each of the others in turn vaults over him. The first one vaulting stops and stoops; the third does the same, and so on until a row is formed. The first who stooped starts the game all over again. Chief interest is in leaping and running.

20. **Ruth and Jacob.** — Jacob is blindfolded in the middle of the ring. He points to someone, who becomes Ruth. "Where are you, Ruth?" says Jacob. Ruth answers, and guided by her voice he chases her until she is caught or time is called. When caught and recognized, Ruth becomes Jacob. Chief enjoyment is in running and chasing, in repeating the words, in agility, and in chance.

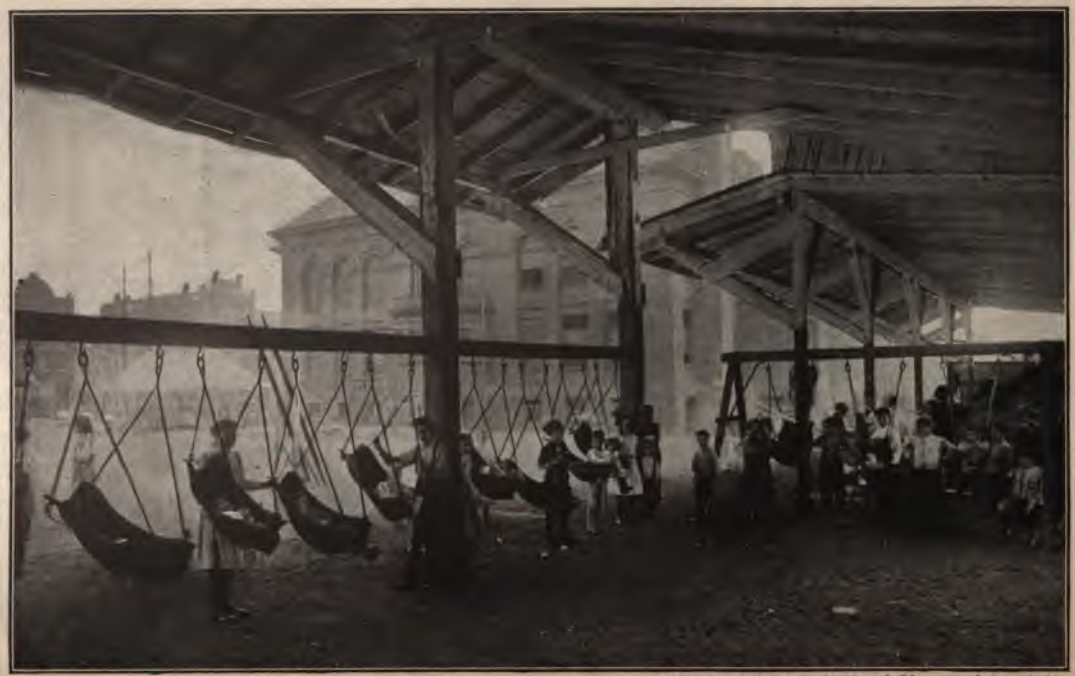
21. **Hill Dill or Pom Pom, Pull Away.** — Children stand against a wall in a row or on a line marked on the floor, facing another wall or line. One player stands half way between the two lines and calls out "Hill Dill, come over my hill," and the players try to run across to the other wall or line. If they reach it without being touched they are safe, but all who are tagged remain in the center, and as the captain calls out "Hill Dill" they assist in catching the rest of the players. The game continues until all are caught, and the first one captured is the one to remain in the center next time. Chief interest is in running and chasing, and in strategy.

CHAPTER XVII

Movements of Gross Bodily Control: Swinging, Sliding, and Other Effortless Movement Plays

Effortless Motion Accompanied by Pleasurable Effects in Swinging, Skating, Sliding, and Sailing. — That effortless motion is accompanied by pleasurable results seems apparent from even a cursory investigation into the sports of mankind and the play activities of childhood. Peoples of many races enjoy sailing, driving, horseback riding, motorcycling, automobiling, and aviation, all of which involve a swift gliding or jogging movement. In most wheeled vehicles, also in boats and in airplanes, the forward motion in a lofty seat doubtless enhances the pleasure in each new and delightful sensation felt. We are agreeably sensitive also to changes in the swiftness of the motion, acquiring such a passion for speeding that racing boats, planes, and automobiles have become a commercial necessity. While horseback riding and bicycling partake of the nature of both passive and active enjoyment in movement, the pleasure experienced is distinctly of the passive type. In bicycling as contrasted with walking, we find little or no hindrance to swift gliding motion, while in horseback riding the horse overcomes most of the mechanical resistance.

In sailing and in driving a motor boat or automobile, the satisfaction in movement is doubtless enhanced by a sense of power in producing the effect.



Photographed for the Pittsburgh Playground Association

HAMMOCK SWINGS FOR SMALL CHILDREN

Sliding and Swinging the Most Common Forms of Passive Movement in Childhood. — With children of civilized races as with the peoples of savage or primitive ancestry, swinging and sliding are the most common movement plays. The infant responds almost at birth to the soothing effects of rocking in his mother's arms or in the cradle. And what tiny tot does not invent some kind of rocking-horse, be it only father's foot or the arm of a chair! What pleasure he finds a few years later in swinging on the limb of a tree or on the seat of a swing! There is in swinging an exhilaration and a push of the imagination which enlarges the mental as well as the physical horizon. One writer goes so far as to say, "I suspect that there is a specific stimulation of the brain-cells that only the swing can give, and that the child who has not had this emotional arousement may be the poorer intellectually all the rest of his life."[1]

What a thrill of delight accompanies a child's first perilous descent down the cellar door or the banisters of a staircase! In sliding, the swift downward motion brings a thrill of joy heightened perhaps by a sense of the hazardous nature of the descent.

The Use and Value of Swinging Plays in Motor Education. — Skating is one of the oldest and most pleasurable movement plays in the history of the race. Ice skating and roller skating are common pastimes of children in civilized communities, both urban and rural. They appeal to both active and passive enjoyment of movement. Swings are expensive to buy and difficult to install, and bring some hazards.

[1] Curtis, H.: *The Playground*, Vol. VII, p. 318.

Unless they are set on an elevated piece of land, children are frequently knocked down by running in front of others who are swinging. There is also some danger of the swing frames collapsing unless the iron frames are carefully set in cement blocks. However, the benefits to be derived cannot be dismissed lightly as due to mild emotional stimulus. The child needs exercise other than in the erect position. At three years his limbs are very short as compared with his stature, being about 38 per cent of his height, while even at six years they are but 44 per cent. For this reason swinging and sliding are of inestimable value. Both activities exercise the legs while relieving them of the entire support of the torso.

Lawn and Hammock Swings. — Babies like to lie or swing gently in hammocks. Many playgrounds supply hammock swings for babies, in order that the "little mothers" may play with older children near by. For children from two to six years of age, chair swings suspended by ropes or chains from a strong wooden or steel frame are very satisfactory. Montessori advocates a wide-seated chair swing which may be set in motion by pushing with the feet against a wall. Chair swings so suspended that the majority of children can swing in them by barely touching their feet to the ground provide for more vigorous exercise than the wide-seated swings.

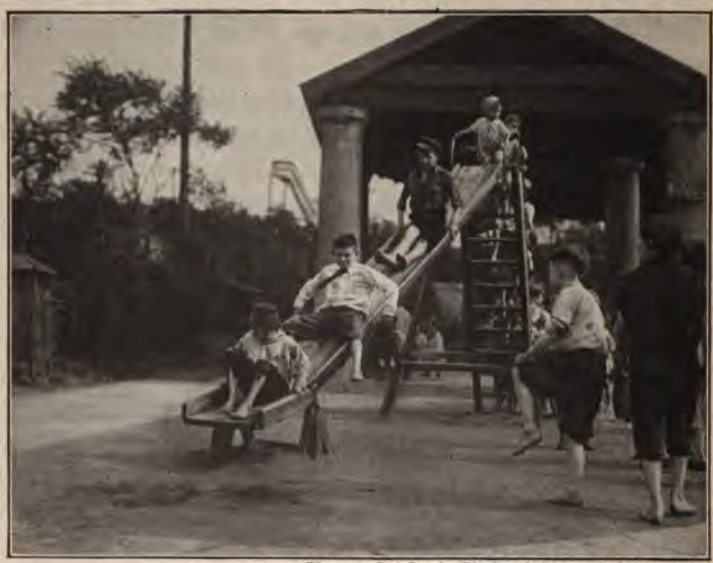
A Single Rope Swing and Trapeze Swing. — The orchard swing so common in rural communities finds its city counterpart in the rope swing commonly suspended from trees or unused doorways. Children find the climbing and swinging rope almost as satis-

factory as the seat swing. A low trapeze swing can be secured from an athletic supply house or made from an old broom handle and a strong rope. This piece of apparatus can well be combined with the swinging rope, since many games can be played by swinging from one to another.

The Giant Stride. — The writer remembers the great delight she experienced as a child when swinging on a revolving clothes-rack in a neighbor's back yard. This device consisted of a large wheel which revolved on the top of a wooden pole. In the country it is a common practice for youthful experimenters to mount a wagon wheel on a pole and to swing from knotted ropes attached to the spokes. The giant stride, as bought in an athletic supply house, consists of a tall pole about fourteen feet high, to the revolving head of which are attached six ropes or chains forming ladders. The children hold on to the different rungs of the ladders and run about the pole, swinging on the rope and touching their feet to the ground every five or six yards. This piece of apparatus does not belong on a small children's playground. For children to play safely upon it they must be taught to jump off and dodge quickly out of reach of the other children swinging rapidly near by.

The See-Saw. — The see-saw has proved to be a dangerous piece of apparatus. Children have a tendency to jump off when down, and thus throw their partners off with a thump. They often stand in the middle and work the see-saw, falling off or occasioning those at the ends to fall to the ground. If see-saws are used in the playground they should

have handles and should not be more than two and one-half feet high. Other see-saws, built still lower, will be found useful for the younger children. The use of see-saws on the playground demands constant care and supervision. The rocking boat is a piece of apparatus which, while more expensive to install than see-saws, is similar to the see-saw in the motion produced and rather more valuable.



Photographed for the Pittsburgh Playground Association

A Slide for Small Children

Teeter Ladder. — Children enjoy swinging on a teeter ladder, a piece of apparatus which may be purchased from any athletic supply house. It consists of a horizontal ladder balanced in the middle on an

iron pole. The children take hold of the ends of the ladder with their hands and swing as on the see-saw. It is not a very safe piece of apparatus, for the children tend to jump off at unexpected times and throw their opponents down. It is not usually found on a children's playground.

The Merry-Go-Round. — There are several types of merry-go-round. One consists of a circular platform on which children sit while other children revolve the platform, running along beside it, then jumping on while it is in motion. The movement produced is capable of making the children dizzy and seasick. Even those who push may be affected. Another type of merry-go-round is built with wheels and runs around an iron track. The children operate it by a lever arrangement and derive considerable exercise in so doing.

Sliding Plays: Their Use and Value. — Sliding is enjoyed by children chiefly because of the pleasure in swift, gliding motion, unchecked by the difficulties which usually accompany movement. A baby learning to creep derives enjoyment from sliding over a slippery floor, pushing chairs and toys about with him. "Before R was two years old he begged to be lifted upon a smooth, inclined board from which he slid down to the floor again and again. About the same time he derived much pleasure from riding on a small kiddie-car. The sliding motion, coupled with the pleasure he found in propelling his own vehicle, easily accounts for the enjoyment he experienced. Being fortunate enough to possess a cellar door out-of-

doors, he soon learned to make good use of it."[1] Sliding down cellar doors is no longer a common pastime with city children. Yet what growing boy or girl does not invent some kind of slide! Usually it is a smooth board inclined against a fence. The playground in its early days recognized sliding as a play interest and has never ceased to improve upon the sliding apparatus. The first slides were planks supported in an inclined position by upright poles with ladders attached. Pine and cedar planks were soon found unsatisfactory and maple was substituted. The maple slide comes in three sizes. A kindergarten slide should be secured for the use of small children, while the ordinary playground slide, fifteen and one-half feet long and eight feet wide, is more suitable for children over kindergarten age. Where space is limited a slide with adjustable incline is an advantage. It can be detached from the steps and leaned against the wall. An important feature in a slide for little children is a series of steps broad enough to prevent the child's falling through, and a slide railing to grasp in making the ascent. Many casual observers note the long line of children who take turns in the use of the slide in the busy hours of a crowded playground and conclude that the slide is a mere stimulus for relaxation. Others see the value of climbing for the muscles of legs and arms, note the apparent relaxation from strain which follows the sitting position, and draw the inference that such play is valuable from the physical standpoint only. It is well to remember that to make the arms and legs move effectively in early

[1] From the author's unpublished records

childhood is a problem which requires all the thinking a child is capable of. Sliding plays present many obstacles in which the body must be adjusted to the handicap imposed, and in this adjustment reason and judgment play an important part.

The Sliding Pole. — The sliding pole is used in most gymnasiums to pass from the second story to the first. These poles are placed on the ends of a gymnasium frame and are steeper and shorter than the gymnasium slide. Boys of ten or over take great pleasure in sliding down these poles. The sliding poles are not included, however, in the playground equipment for children under ten.

The Kiddie-car. — Before passing on to sled-riding, tobogganing, and skiing, it seems best to mention again the kiddie-car, a favorite American toy. The writer heartily recommends the use of the kiddie-car in home and playground. In many cities, where hills abound, children use these cars for coasting downhill on the side-walk; the three-year-olds guide the car by an occasional touch of their feet to the ground; the older ones steer with the handle.

Other Wheeled Vehicles. — The toy market is overcrowded with wheeled vehicles which can be propelled by pushing, wheeling, rolling, and sliding, and by foot movements. Wagons, velocipedes, tricycles, bicycles, and toy automobiles and airplanes on wheels are the delight of city children. They are enjoyed not only for the pleasure in rolling and sliding motion, but also because of the muscular effort necessary to produce motion.

Coasting has always been a favorite pastime of both city and country children. In many city playgrounds there are put up each winter toboggan slides down which children slide to artificial lakes of ice. In Pittsburgh, where hills abound, children of many neighborhoods do not have to come to the playground in winter to coast, as this is the most common home and neighborhood sport.

Skiing. — Skiing is a common sport with children in the northern states where the winter brings perpetual ice and snow. Little children who cannot purchase skis often use home-constructed ones and make their own snowshoes.

Spontaneous Pleasure in Swinging and Sliding Toys. — Children derive a certain pleasure in swinging balls, tin cans, or other objects attached to strings. They like also to swing dumb-bells or weights and to move to and fro the various members of the body. Some of their pleasure experienced in such plays is derived from the repetition and contrast in the movements, also from the sense of power in making things happen. Many games and folk dances give expression to this spontaneous enjoyment of swinging rhythms. "Looby-Loo" is an example of a game involving simple swinging movements of the feet, arms, and head, while "Hickory, Dickory, Dock" and "How Would You Like to Go Up in a Swing?" are examples of the use of the more complex swinging rhythms in the folk dance. Almost equal to the interest in sliding is the child's interest in pushing toys over smooth surfaces and sliding them down inclined planes. A visit to the toy shop reveals many games in

which marbles slide down a loop-the-loop arrangement, or a spiral staircase, and many other types in which weighted tumblers perform their part on a score board or slide down inclined planes and score below.

Records of Swinging and Sliding Plays

Swinging Plays

1. **Hammock Swings.** — "Little mothers" stand in line on the playground to place their charges in the hammock swings. Older children play "sail ship" in these swings. Sometimes they use brooms for oars and play rowing.

2. **Chair Swings.** — In chair swings children experiment with various forms of movement. They swing high, low, fast, slowly. They twirl around and then unwind, or attempt to swing a certain number of times without touching their feet to the ground.

As these spontaneous variations occurred, the play leader often sang appropriate rhythms, thus guiding the spontaneous rhythmic movement by a proper musical accompaniment. Children sometimes row in the chair swings, using the little brooms for oars, and throw out a line to catch pretended fish. They play swimming by lying flat on the seat, moving their arms or legs in the air.

3. **Swinging on Single Rope Swings With Seats.** — The children swing two on a seat in standing position, working up to considerable speed; they swing various ways in sitting position, or whirl gently, twisting and untwisting the rope.

4. **Lawn Swings.** — In playgrounds where some strong lawn swings have been installed the children play train, requiring tickets from those desiring to sit

upon the seats, calling out stops, and assisting children down the platform when the train stops.

5. **Climbing Rope and Trapeze Swings.** — Children play sailor and climb up and down the rope. They play fire sliding down the rope as a fire escape. Sometimes "lifesavers" lower themselves from the rope to the floor and rescue survivors swimming about in the sea.

Most plays on the climbing rope and trapeze swing are mere plays of physical activity. The children try to excel each other in climbing and swinging high and fast, or in swinging from the trapeze swing to the rope and back again.

6. **The See-Saw.** — The children experiment in swinging high and low, fast and slow. One child sometimes stands in the middle and rocks the board rapidly up and down.[1] Many dramatic games can be played on the see-saw. Boat games are frequently invented because the rocking movements of the see-saws suggest boats. Trains are also dramatized, possibly because slow or fast movement, getting off and on, and other features connected with trains lend themselves readily to the movements of the children on the apparatus.

7. **The Merry-Go-Round.** — On this apparatus, children experiment in slow and fast movements. Sitting securely upon the whirling center-board they play they are riding on ocean liners or are driving swiftly moving horses.

8. **Swinging Balls and Other Objects.** — Children like to experiment with balls attached by long strings to a horizontal pole. They like to bat the balls back

[1] This is usually prohibited in supervised playgrounds.

and forth to each other and to swing them to and fro. Regulating the speed of these moving balls adds more zest to the experimentations. This involves considerable practice to obtain a high degree of skill. It is more difficult to regulate the speed when movement is almost imperceptible than when movement is at its height. Any group of children invent a variety of plays, such as batting a ball to a partner who hits it on the rebound, dancing balls up and down, hitting, running, and catching balls, twirling and untwirling them, swinging balls to represent pendulums or other moving objects, and putting the balls through various types of rhythm in response to the stimulation of instrumental music.

9. **Swinging the Body.** — Children like to swing the body to represent a rocking-horse, a swing, or wind-blown objects such as windmills, trees, flowers, or grass.

Sliding Plays

1. **The Artificial Slide.** — Very young children sit timidly on the slide and clutch the side railing tightly while they slide down. They soon learn to do what they see other children do, even to sliding down head foremost.

2. **Variations of Play on the Slide.** — Boys and girls from five to nine years old discovered the following ways of using the slide: sliding down on a block or board; sliding down backwards; sliding down on one side with arms outstretched in swimming position; sliding down in sitting position with arms folded or stretched overhead; sliding down while performing

specified acts with the hands, such as clapping a fixed number of times or throwing objects up and catching them; starting down on the knees and when half way down grasping the side of the slide and springing to the sitting position; playing "tag" while sliding.

3. **Dramatic Plays on the Slide.** — Swimming. Train. Birds flying down the slide. Bridge: in this play the children hold their hands up to form a bridge under which all children must slide.

4. **Sliding Toys.** — In the playrooms of Pittsburgh the little children just learning to walk, push chairs and doll-cabs about on the oiled floors. Children of creeping age push blocks, engines, and animals on wheels with them as they creep. As soon as some facility in walking is acquired, children like to pull after them toys on wheels, such as wagons, elephants, bears, dogs, and rabbits. The smooth gliding motion of the wheeled vehicles adds to the pleasure felt in controlling the movements of something outside of self. Children often incline a board against a table or box, and slide blocks or toys on wheels down the inclined plane. They invent various games with weighted toys called tumblers, counting a certain number of points when the tumblers complete a successful journey to the end of the board or to rings marked on the ground.

5. **Skating.** — Spontaneous sliding or skating on icy streets is a common example of the prevalence of sliding play both in childhood and in adult life. Children sometimes bind on their feet boards slightly larger than their shoes, and slide or walk over the ice

on these improvised snowshoes. Roller skating is a common pastime with city children. In certain sections of our large cities one may walk along streets thronged with happy skaters. Some crowded streets at certain seasons of the year present the appearance of a skating rink.

CHAPTER XVIII

Movements of Gross Bodily Control: Dancing and Swimming

Both swimming and dancing may be classed as active movement plays involving the acquisition of skill in their performance. To find the sources of pleasure in dancing and in swimming, we must first recall the fact that the human organism when refreshed finds pleasure in movement. This fact, however, does not account for the peculiar satisfaction found in swimming or the fascination and charm the dance affords. In swimming, the tonic effect of the water upon the skin and its resistance as a medium for locomotion, together with enjoyment of the rhythmic movements necessary to support the body, combine to place this sport in the foremost rank of movement plays. Dancing gives us a highly intensified form of locomotion in which the body is put into varied positions suggested by the rhythm. We see in dancing almost a complete relaxation from tension and a state of physical exhilaration in which there is sometimes noticeable complete unconsciousness of fatigue together with a sense that the body is of feathery lightness. In swimming, there is a relaxation of some muscle groups with a corresponding tension in others.

An Analysis of Adult Dancing. — Proceeding first to a description of the dance, we shall then confine

ourselves to a brief mention of such swimming activities as are noticeable among children under ten years of age, leaving other and more spontaneous movement plays in water to be treated in another chapter. To the analysis of adult dancing presented by Groos, the writer has little to add. Presenting Spencer's view that rhythm is a most suitable instrument for the expression of passionate emotion, sad or joyous, Groos reinforces Grosse's criticism that Spencer's theory makes the rhythm of dancing only a strongly intensified form of locomotion, and points out that it does not in the least explain the pleasurable and intoxicating quality of rhythmic motion. As Groos says, rhythmic movements are employed among most people either as a means of producing ecstatic conditions as seen in the initiatory rites among savages, or as a means of inciting religious ecstasy as practiced by the religious sects who roll or dance until a condition of intoxication results. He does not overlook the use of rhythmic movements in connection with fighting or love plays, or their social use in modern gymnastic and social dancing. His conclusions point out that it is safer to regard dancing as an exciting movement-play, which possesses in common with other narcotics the magic power of abstracting us from commonplace existence and transporting us to a self-created world of dreams.[1] In speaking of the origin of the dance among primitive people, St. Johnson says: "One can almost imagine the Earliest Man waking one morning and finding the sun shining, the air bright and cheerful, the birds singing,

[1] K. Groos: *The Play of Man*, pp. 88-91.

and everything good to see. And then, through very joy of life, he started dancing, and laughing at the pleasure of this new sensation, he would start singing and clapping his hands to keep time, and thus there, out in the gray wilderness of Ancient Earth, were the two great arts of Dancing and Music first brought to life."[1]

St. Johnson's theory, however, fails to account for the spontaneous rocking rhythms which accompany grief among many peoples. The Irish "wake" and the rites and rituals accompanying the burial of the dead among savage tribes reveal the fact that *all* passionate emotion tends to express itself in rhythmic form.

What is Rhythm? — The fundamental fact about rhythm is periodicity or a regular succession of like events. When any series of sounds, noises, or movements is broken up into groups, we have units appearing in serial form. It is the feeling for the group as a whole which sets rhythm off as distinct from other impressions.

The Origin of Rhythm is Physical. — When we have a rhythmic movement we have a rhythmic nerve current. The perception of rhythm comes from the presence in consciousness of a wave of kinæsthetic sensations, due either to movement or tensions of the muscles. There seems to be a biological ground for pleasure in rhythm. The great pleasure which children find in rhythm is due to the power rhythmic experiences have to set up vibrations within the body and stimulate the harmonious activities of the bodily organs.

The Psychological Basis of Rhythm. — The tendency to make rhythmic movements is instinctive with

[1] Reginald St. Johnson: *The History of Dancing*, pp. 10-11.

children. Their joys and sorrows become externalized in rhythmic gestures involving movements of the trunk, arms, and legs. Sigismund gives an admirable description of the rhythmic movements of a twenty-week old infant. "If the nurse holds up a child of this age on her lap, supporting it under the arm, it will dance, hop, and spring perpetually like a hooked fish, bound like a grasshopper, draw up his legs like a closed pocket-knife, and twist his head and neck — in short, he will exhibit the same mercurial exuberance of motion which pleases us in young goats, lambs, and kittens." [1]

Sigismund's illustration emphasizes the spontaneous character of early rhythmic expression. Native appreciation of rhythm and application of the laws of rhythmic progression have a basis in the nervous and muscular system. Any movement once started tends to recur and to keep recurring. One author explains this as follows: "This tendency to recur follows from the fact that the perceptions-reflex of the movement itself acts as a stimulus, similar in character to the original, toward the repetition of the movement. There is, therefore, a tendency for a regularly recurring series of similar movements to take place, each stimulated by the perception-reflex of that which precedes it. That this series does not go on indefinitely as the result of one single stimulus, is due to the fact that in the highly complex human nervous organism fresh external stimuli are constantly occurring which interfere with and prevent its development.[2]

[1] Sigismund as quoted by Karl Groos in *The Play of Man*, p. 80.

[2] J. B. McEwen: *The Thought in Music*, pp. 9-10.

The Range of Children's Dancing. — The walking, running, skipping, jumping, leaping, and hopping movements of children tend to become rhythmical as soon as they become automatic and habitual. Children's spontaneous dancing includes more than this rhythmic repetition of movements. It is the result of a mood or idea and as such runs the whole gamut of rhythmic expression, including intonations, gestures, attitudes, postures, and even song. A close observer of the spontaneous dance of emotional children who are especially susceptible to music reveals the rare transports of joy they experience when responding through the dance to the moods and ideas revealed in good music. It is easy to see that the ecstasies of motion transport them into another world, where they are content to submerge themselves in ordered and repetitive motion. Even the normal child feels at times the poetry of motion. With the average child, double and quadruple time are easier to interpret than triple time. Some children arrive at rhythmic perception very slowly, learning first through imitation and suggestion what other children express spontaneously. Interest in rhythmic expression, as has been shown, begins as early as the first year and declines in the teens. A study of games seems to indicate that girls enjoy rhythmic movements more than boys.

Training in Rhythmic Activities. — Many theories and systems have been devised to bring about appreciation and technique of rhythmic expression. Two basic methods stand out as extreme views in teaching. Both recognize that rhythm is perceptible by both the

aural and the muscular systems. There are those who, noticing the ease with which three and four-year-old children respond to music through bodily representation of musical values, work for sensibility to music, and let the children's senses, limbs, and mind be stimulated to externalize the values expressed in the music. Others, while relying upon music to supply emotions and thoughts, seek first to find points of identity between the music and the lives and actions of the children. The last mentioned aims to catch individual and characteristic modes of expression and to improvise music which truly follows and embodies that individual or characteristic note. Jaques-Dalcroze combines both methods [1] He claims that rhythmic movement can best be acquired by a system of physical exercises—a highly flexible system adapted to a large variety of temperaments. He works for spontaneous representation of individual moods and mental attitudes and also for gymnastic exercise through exposure to the thought in music. Devotees of both methods depend upon the experimental method for improvement and skill, for recent studies concerning the acquisition of muscular skill point out that progress comes through this method of trial and success. Children must perform a muscular act in order to have a means of understanding suggestions concerning it. But when an improvement has been hit upon it should be made conscious and permanent by a teacher who calls attention to it as good.

[1] E. Jaques-Dalcroze: *Rhythms, Music, and Education.*

Swimming. — Very young children can keep afloat in the water. A child of three or four years when placed in deep water usually attempts some sort of beating movement with his hands and feet. While many children learn to swim as early as the fourth year, the period from nine to twelve is naturally the time when the greatest interest in swimming prevails. Studies of play activities of children in various localities all unite in assigning to this period the plays and games affording the most vigorous activity for the whole body.

Authorities agree that swimming has both physiological and æsthetic value. It is one of the most beneficial means of preserving the health. The muscles used are of the dominantly fundamental type; and the effect of the special swimming coördinations upon circulation, digestion, and the nervous system is exceedingly beneficial. Swimming is an æsthetic asset in that it excels all other forms of exercise in variety and grace of movement. It is a physiological asset in that it enables the individual to build up resistance to disease and offsets the strain city life and sedentary occupations bring upon the accessory movements and nerves.

The ability to swim is provided for in the common school education of England. Public swimming baths exist in all the large cities, and the children of the upper grades, accompanied by their regular teachers, go to these baths in the spring and fall. It is a recognized fact that the swimming pool ought to be part of the equipment of every elementary school. No equal amount of space devoted to play equipment can per-

form half the service that the swimming pool renders. In the United States the public swimming pools have in most cases been connected with the city playgrounds. To these public playgrounds, swimming pools, and baths thousands of men, women, and children flock in the warm summer days; and all through the spring and fall the pools are in constant use.

Records of an Infant's Spontaneous Dance Movements

9½ Months. — R was fretting to-night from teething, when I placed him in his high chair near the piano and played to him. His posture and facial expression instantly changed. His face brightened and his whole body bobbed up and down rhythmically, while at the same time his feet hit the footrest at regular rhythmic intervals.

11 Months. — Rocking the chairs is a favorite pastime with R. That the muscular exertion occasions part of the enjoyment is shown from the fact that he rocks the heavy chairs most frequently. That the repetition and contrast in the movement is also a part of his pleasure is evidenced by the fact that he follows with his eyes the motion of the chairs. R pounds a good deal in repetitive fashion, sometimes on the floor with his hands, at other times with his toys.

13 Months. — When carried along the floor in erect position so that his feet barely touched the floor, R moved his feet rapidly and rhythmically as if walking.

16 Months. — R walked sideways, rapidly, around the dining-room table and occasionally stamped.

When holding on to the table he sometimes stood still and stamped rhythmically several times.

19 Months. — I suspended a red ball from a string. R hit it vigorously, watched it swing, then repeated the act.

22 Months. — R was visiting his grandmother's house, where music from a vocalian was played several times. Almost at once he began to bob up and down rhythmically and with heavy movements of the legs to dance about the room, his arms beating time in the air. He repeated these movements frequently whenever dance music was played on the vocalian.

23 Months. — I pointed out some birds; R gave a shout of delight as he leaped slightly upwards and forwards several times with arms outstretched.

In this elemental dance we see rhythmic expression in the form of pantomime. To appreciate the meaning of the dance it is necessary to understand the part that gesture plays in the evolution of the race. The appearance of birds sets up rhythmic nerve currents within the body and rhythmic movements appear.

26 Months. — One cold day R was running about on the front porch. Accidentally his steps took on a forward galloping movement. From that time on he galloped about a good deal as he moved from place to place.

"Play again" is the invariable request after dancing about in simple games, such as "Here we go 'round the sun." In the boom, boom, boom which follows the dance, R jumps up and down vigorously, with keen enjoyment. When R was walking around in a ring with me I quickened the pace and he danced the gallop very rhythmically.[1]

[1] From the author's unpublished records.

Records of Spontaneous Dance Movements Observed in Children's Playgrounds

1. A group of children from two and a half to six years of age were seated on the floor ready to play ball when one child started to beat time on the floor with her hands. Instantly every child followed her example. The play leader improvised simple running chords; she played these first slowly, then rapidly, changing from loud to soft. Some of the children showed instantly a spontaneous appreciation of the contrasts in the music; others perceived the contrasts largely through imitation of others' movements.

2. One day a canary in a cage was brought into a playroom. Nearly all the children danced up and down in repetitive fashion, some exclaiming "Ah!" and clapping their hands.

Here again we see pleasure in serial form of motion.

3. A bundle containing several dolls was unwrapped before a group of two- and three-year-old children. When the first baby doll was held up, the children reached up their arms toward it and bobbed up and down in great glee, calling eagerly, "Me, me, me!"

4. At Christmas time a group of children were taken into an adjoining room where stood a brilliantly lighted Christmas tree. Some gazed quietly at the spectacle, but the majority jumped up and down, merrily exclaiming, "Ah!" or "Oh!"

5. On an outdoor excursion a boy of four discovered a tiny bud on a bush. He jumped up and down and called to the other children saying, "See! see!" Another group of children from a slum district found some tiny blades of grass, patted the grass

gently, then jumped up and down calling to the other children to come and see.

6. In dramatizing the story of the "Pied Piper of Hamelin," the children walked quickly and excitedly when the rats disappeared, and slowly, almost solemnly, when the Piper piped the children away from their homes.

7. In playing Cinderella, the good fairy walked in with a slow, dignified tread; the evil fairy limped in, and stamped.

8. The children were sliding on an oiled floor, and, quite naturally, threw out their arms every few steps to regain balance; the play leader then accompanied this spontaneous play with a slide-slide-slide-stop rhythm. Later the children varied this rhythm to run-run-run-leap and leap-run-run.

9. One day the play leader allowed the playground rabbit to run about among the children. They chased it around gleefully for a minute, then set themselves to the task of cleaning the cage. Soon the rabbit, left alone, began to leap about on her hind feet. It was not long before the children had acquired the bunny leap, which they accomplished by shifting the weight of the body from their feet to their hands, while leaping about on all fours. After this occurrence they asked almost every day to play bunny, and, when music was supplied, the play took on rhythmic form.

10. A little bird hopped upon the window sill; immediately the children in the playground began to hop like birds. A few days later a number of rhythms had developed from this activity, such rhythms as run, run, run, hop, hop, and vice versa.

CHAPTER XIX

MOVEMENTS OF GROSS BODILY CONTROL: THROWING, ROLLING, AND SPINNING PLAYS

Striking and Throwing are Originally Satisfying. — The prevalence of throwing plays among peoples of all nations seems to indicate to many authorities that throwing is at bottom instinctive. Archer thinks that throwing stones and hitting with a club are responses apart from training.[1] With many primitive peoples throwing was a means of killing adversaries and bringing down game; in fact, like climbing, it was an important way of acquiring supremacy over wild animals and inferior races. The fact that the throwing propensity persists in full force in an environment which ordinarily imposes pain and punishment on many of its manifestations, seems to indicate that it is more than a mere matter of imitation; in fact, makes it seem probable that both striking and throwing are originally satisfying. This satisfaction does not necessarily arise from the fact that both are racially old activities, as Archer would have us believe, and hence deeply rooted in the brain centers, nerves, and muscles concerned with these movements; but from the fact that they have a function in maturing the muscular system.

[1] R. A. Archer: "Spontaneous Constructions and Primitive Activities of Children Analogous to Those of Primitive Man," *American Journal of Psychology*, Vol. XXI, pp. 144-49.

Archer believes that throwing develops from striking; that when an object slips accidentally from the child's hand it reveals the possibility of extending control over the object by throwing it. Naturally, downward throwing occurs first, and forward throwing develops soon afterward, while upward throwing seems rather difficult to acquire because children find difficulty in coördinating their catching movements with the course of the descending ball.

Progressive Development of Throwing and Striking Movements. — As early as the sixth month, the child shows a tendency to pound with his spoon or rattle. At about the same time he begins to drop his toys. One child whom the writer observed accidentally loosened his grasp upon a rubber doll and seemed surprised that it had passed from his grasp; then, his eyes falling upon the doll, an association was formed whereby he connected the act of dropping with a new position of the doll which had escaped from his grasp. At eight months this same child had developed a passion for dropping toys out of his crib. When the object dropped or thrown caught accidentally on the edge of the crib, he would reach over and attempt to push it down. If he succeeded, he would cry out with delight; if the effort failed, he would utter a begging cry for assistance. At nineteen months, dropping pebbles down a steep embankment was a favorite pastime. He would shout "gone" or "bang" as soon as the stone left his hands. Picking the stones up afterward and throwing them into a pail was decidedly less pleasurable. This was probably due to the fact that picking up the stones afterward was play-

fully insisted upon by his mother, hence was not a self-initiated activity. At another time, gathering stones in a pail became a pleasant pastime. With this same child striking by means of a stick was first noticed on the occasion of daily walks. Previous to this time, however, he had knocked balls about the floor with a broom, or rolled them upon the table by hitting them with an egg-beater. On one of these walks he found a stick and dragged it along the ground, or struck it occasionally against a stone wall he was passing. From that time on striking at fences, grass, and other objects was indulged in freely during the daily walks. He would cry out if deprived of the stick and would show great satisfaction at the skill he acquired in striking grass and weeds a sharp blow. With this child, playfully striking a pet dog was a tendency hard to eradicate, while hitting his playmates proved so satisfying that even pain and punishment failed to eradicate the tendency entirely. The following illustration seems to indicate the playful nature of this striking propensity. One day in his play the child, entirely without provocation, gave his playmate a light blow on the hand, laughing as he did so. The little girl instinctively drew back and cried out, running behind a chair. Quickly the culprit sensed a chase; striking both arms in the air as he ran, he chased her merrily around the porch from place to place.

Anyone who has played with little children has seen numerous instances of their keen enjoyment of spontaneous throwing. As Sigismund says, "All children like to throw and are often blamed for it

very unjustly. * * * We should rejoice, then, with the children when a stone goes a long way or bounds into the water with a splash. When children get out-of-doors the desire to throw something takes possession of them; even the yearling picks up pebbles and delights to roll them. The older boys stand on the coping or carriage block, and are engrossed in testing the force and directness of their aim. They are trying the power of will over matter."[1]

That boys are often blamed unjustly for throwing seems to be borne out by the following: A group of boys in a summer recreation school stood waiting for the doors to open, amusing thmselves in the meantime by throwing each others' caps over the high picket fence surrounding the school. As soon as the doors were opened the boys assumed an eager, expectant attitude and went directly to the bowling alley. No further transgressions were seen that day.

Facts about the Striking Propensity. — In writing of the striking propensity, Archer presents some interesting facts: "Many of the boys and girls say they carry a stick because they feel safer when walking along the street or road. A stick may be used to strike at weeds, animals, or even people. It is also dragged along a picket fence so as to make a rhythmic noise. In riding in a vehicle, one great pleasure is to use the whip on the horses. Boys and even girls engage in whipping contests, in which two of them with whip in hand beat each other until one or the other gives up. Driving stock also gives great pleasure because the whip can be freely used. Much

[1] Quoted by K. Groos, *The Play of Man*, p. 104.

damage is sometimes done in striking flowers, small trees, and other plants of value. There seems to be an almost blind impulse to perform this motion with something in the hand in the shape of a stick or whip." "From the use of the stick and whip the child in the course of time learns the use of the lever. This usually does not occur until the tenth or twelfth year. There is considerable variation here. It is interesting that many children do discover this incidentally in their play with a stick." [1] Archer also mentions the following throwing activities: "Small children throw everything they can get hold of, blocks, toys, spoons, knives, forks, food, balls, etc. When larger they throw stones, skippers, snowballs, corn cobs, and pieces of coal. Stones are used far more than any other object in throwing. The returns show that they throw at trees, street lamps, birds, horses, wagons, people, windows, church steeples, signs on streets, shutters, passing trains, brass balls on top of poles, cats, dogs, fruit on trees, chickens, and barns. About 40 per cent of the boys threw at cats, dogs, and birds." [2] Does not this last fact seem to indicate that a good deal of the zest in throwing comes from the desire to make things happen, dogs, cats, and birds bringing more startling reactions than do houses, lamp posts, and trees?

Throwing with the Help of a Blow. — There comes a time somewhere around the sixth year when the boy seeks naturally to hit the ball a blow with his

[1] R. A. Archer, "Spontaneous Constructions and Primitive Activities of Children Analogous to Those of Primitive Man," *American Journal of Psychology*, Vol. XXI, p. 145.

[2] *Ibid.*, p. 146.

hand or with an improvised bat. This play is usually combined with marksmanship. While children of this age do not play highly involved games of marksmanship, they play simplified games of tennis, croquet, baseball, and shinny, in which there is either hitting at a mark or hitting with some idea of placing. In most games of this sort the radius of the arm is artificially extended by means of such instrumentalities as a bat, a racket, mallet, sling, or bow. The leg is also used in kicking, another means of increasing the sphere of movement, as in football when kicking at a goal. Other games involving hitting with the help of a blow are polo, billiards, cricket, golf, ping-pong, volley ball, and net ball.

Throwing at a Mark. — Groos believes that with primitive people, throwing at a mark originated in the hostile use of the ability to throw, and notes the fact that these games belong essentially to the male. It is an interesting fact that such throwing contests still persist in the form of games when conditions no longer put a premium on the survival of those possessing this skill. At the present time there is no intimate connection between children's plays of marksmanship and fighting play.

Aiming Requires Skill and Promotes Concentration. — With very young children, simple forward throwing is quickly followed by the desire to hit something, a house, a tree, animals, or another child. The interest in shooting at a mark or goal is not strong before the seventh year, although a few kindergarten games testify to the beginning of this interest. One reason for this interest in aiming, at about the seventh

year, is that the finer muscular adjustments are now being correlated with the rapidly developing brain centers, and interest in skill and detail are for the first time ends and aims of the child's motor and ideational activity. That marksmanship plays promote a high degree of concentration of attention and the capacity for swift and accurate reactions is seen by even a casual observer.

Shooting and aiming plays occur spontaneously in all playgrounds for small children. A large number of indoor games also appeal to this interest. Manufacturers of toys have commercialized the shooting and throwing interest in all forms of games, such as ring-toss, tenpins, target shooting, faba gaba, etc. Indeed, as Joseph Lee says, "So strong indeed is the marksman interest that it threatens, in America at least, to absorb the whole play schedule to itself. The American youth are just now missile mad. The old running games, like 'Hill Dill,' 'Three Deep,' 'Prisoner's Base' languish; and everything has to be, if not baseball or a modification of it, at least some sort of throwing game." [1]

Many Juvenile Offenses are Due to the Throwing Propensity. — The Juvenile Court records of offences due to throwing seem to support Mr. Lee's opinion. One day the writer was riding in a Pullman car through flat, level country when a stone crashed through the window at her side and hit the back of a man directly opposite. The conductor gave an illuminating account of a number of accidents of this kind which had occurred in this particular section. The

[1] J. E. Lee: *Play in Education*, p. 206.

accidents had been traced to a group of boys who even now were under the probation of the juvenile court. The difficulty of eliminating these boys' throwing activities reminded the writer of her own transgressions in childhood. She remembered gathering stones to throw into buckets of water which people were accustomed to draw from a well near her home. Admonitions from passers-by had little effect. She recalled also the scorn with which scoldings about snow-balling were received in school. A sling-shot was among her early possessions. One day she dared a cousin to shoot a stone from his sling-shot at the screen door of her home. The cousin accepted the dare, and the stone crashing into a piano was a result she had little foreseen. The writer also recalls vividly the throwing contests held in her early playtime. Throwing stones at lamp posts and over low fences and buildings and skipping them over the water were daily pastimes.

In all plays with rolling balls pleasure in motion as such accounts for the satisfaction afforded. To the infant, rolling or shoving balls and other objects is a joy and an end in itself. As soon as the physical coördinations used in aiming movements are built up, the child seeks another end, namely a goal. A little later comes the interest in rolling hoops, twirling wheels on string, and various activities connected with such play. What adult but remembers the fun of rolling a hoop! Here we find the pleasure in motion combined with a new problem, that of developing skill in whipping and balancing a moving object.

From Scotland comes a game called curling, a pastime common also in Alaska and Yukon Territory. This winter game is played on ice by sliding from one mark to another great hemispherical stones with handles on top. The object of the sport is to aim accurately at a mark, guarding one's own partner while striking off one's antagonists.

Both the rolling of hoops and the skipping of stones bring a feeling of mastery over the moving object and the pleasure increases with the development of skill. Skipping stones on water is hardly less pleasurable and is a more universal pastime. The writer remembers spending long hours, when a child, searching for the smoothest, best-shaped stones with which to vie with her companions in these skipping contests.

Tops and marbles have become almost as universal playthings as the ball. From the countryside to the heart of the city, no boy is found without some form of top to spin, some favorite game of marbles. Lee says it is to be regretted that nowadays mere tossing of marbles seems to have driven out the more scientific snapping of the marble. "Tops," he says, "reach their greatest popularity when it is a part of the game to strike, and if possible to split down the middle your adversary's top by a straight and mighty throw." [1] To illustrate the pleasure children find in spinning tops and thus keeping the movements of another object at their mercy, the following is quoted from Wagner's description of a small boy who liked to keep several tops spinning at once: "Each had its name, and he talked to them all. The one which

[1] J. E. Lee: *Play in Education*, p. 206.

spun longest was his favorite, and he tested them by setting them all in violent motion while he ran down in the yard. When he came back he rejoiced over those that were still spinning." [1]

Record of Throwing, Rolling, and Spinning Plays

1. *Simple Throwing*

1. In the baby corner of the playground infants are seen dropping spoons, spools, rag dolls, and other objects for the joy of seeing the "little mothers" pick them up. Some are tearing newspapers to pieces, throwing the fragments about the yard.

2. In the sand pile little tots are dropping sand through their fingers and throwing it as far as they can reach. Others are dropping stones into the sand buckets.

3. In one corner of the playground a group of small children are throwing rubber balls, then running after them. One baby is throwing a ball at her older sister, who rolls it back for the baby to pursue. Another small child happens to throw the ball upward, looks amazed when it is gone, and fails to discover its whereabouts.

4. A little boy is attempting to throw a ball upwards and catch it again. At first he loses sight of it entirely and misses his catch. After some experimentation he learns to look up after it and reaches out gropingly, his face all puckered up; but so uncoördinated are his movements that he seldom catches it.

[1] H. Wagner, as quoted by Groos: *The Play of Man*, p. 111.

5. Older boys are throwing balls upward, trying to reach the height of the shelter house. As the balls speed upward, the boys bend back their heads and follow their courses with their eyes, catching the balls with ease and precision.

6. Some boys, about nine years old, are playing baseball in the modified form of "Scrub" and "Three O' Cat."

7. Bouncing balls while clapping the hands a certain number of times between the throw and the catch was practiced by a group of girls for several weeks until they attained considerable proficiency in this art.

8. "Jacks" is a game in which throwing and catching are not the main centers of interest; rather are the attention and interest focussed on what is done between catches.

2. *Throwing by Means of a Blow or a Stroke.*

1. Babies sitting on a gymnasium mat in the playroom kick with their feet against balls suspended from the ceiling. At home they kick against their mothers' hands.

These are perhaps the simplest plays in which hitting by means of a stroke is noticeable.

2. A group of boys and girls are gathered about a suspended basket ball knocking it toward each other with sharp, quick strokes.

3. Some children sit on the floor playing "Hot Ball." After subjecting the ball to imaginary heat they strike it a sharp blow with the open palm,

sending it across to another child. The ball is kept going rapidly in this play.

4. Two boys are playing a spontaneous game resembling tennis. Their tennis rackets are oblong blocks. They are hitting a rubber ball across a rope stretched between two chairs; the child on the other side of the rope bats the ball back to the one who throws it.

5. Two girls are playing a ball game with toy apparatus consisting of two individual nets for catching and a light-weight ball. Placing the ball in the hollow of the net they pull the sticks apart and thus toss the ball to each other. The child receiving the ball in her own net tosses it back to the second child, who also attempts to catch it with her net.

Some little tots near by imitate this play; one throws a ball which her opponent catches in her apron and then throws back.

6. Sitting on the floor, some children kick a light basket ball back and forth.

3. *Throwing at a Mark*

1. A child a year and a half old rolled a ball toward his mother, missing the mark quite as often as he reached it. When he succeeded in rolling the ball near her, she gaily rolled it back; when he failed, she let him creep after it.

2. A favorite occupation on the playground is aiming balls at a tree. When a large circular target is placed on the tree younger children aim at the three outside circles indiscriminately; older ones aim at the center with accuracy and precision.

3. Several boys and girls between four and six years old are taking turns rolling rubber balls at a pyramid built of blocks; the one who succeeds in knocking it down rebuilds the pyramid and gains another turn.

4. About twenty children are playing a ball game with the play leader; each child has a rubber ball which he throws in turn at an open basket; after one round, those who succeed in getting the ball into the open basket have another turn, and so on until some child wins the final honors.

5. In the playroom, five boys about six years old have propped a table against some chairs to make a slide. Down this inclined plane they are rolling a ball, endeavoring to knock down a tenpin at the foot of the table.

No score is kept; the activity is an end in itself. One day some older boys were found playing a similar game, using the slide as an inclined plane and a set of tenpins for the mark. Each boy had three turns and kept a score of the number of pins he knocked down.

6. Ring-toss and quoits are played daily on the playgrounds.

7. A group of boys invented a new throwing game by suspending a tin bucket from the shelter house. Standing in two lines the members of these teams took turns throwing stones into the pail. A score was kept and at the end of ten minutes the side having the higher score won.

8. Boys are playing marbles. The six-year-olds shoot at anything and use few rules for their play; the older ones pick a good shot and play highly organized games.

9. One day a marble tournament took place on a playground. The yard was marked off into courts and the boys contested in relays, the finals coming off with great spirit.

10. A group of six boys from seven to ten years old invented an interesting marble game; they cut one large and two small circular openings in a shoe box, propped the box up at the back to form an inclined plane, and took turns in aiming three marbles at the holes. A score of sixty points was kept; each marble that went into the large hole counted five; in the small holes, ten.

Nearly all marble games should be classified as throwing at a mark.

11. Some boys suspended a hoop from the shelter house, asked for two basket balls, and lined up on two sides. Each time a member of either team succeeded in getting a ball through the hoop, a stone was dropped into the counting box of that side by the boy who made the successful play. No score was kept, but when the boys tired of the game they counted stones to see which side had won. The play leader later introduced the keeping of a written score.

12. In one playroom boys from eight to ten years of age devised the game of aiming a rubber ball at a spring bell attached to the wall. The play leader supplied a hoop and bell. After that, several games were invented, the aim of all being to hit the bell a certain number of times. One game consisted of throwing the ball over the head when standing with the back toward the bell; another consisted of throwing the ball under one leg, aiming at the bell.

13. The play leader helped some boys to make a wooden target by painting a circular board in three concentric circles, red, white, and blue. The hits scored were one, two, and three for outer, middle, and inner circles respectively. In other playgrounds targets were made by pasting squares of red, white, and blue paper of three sizes on a square board.

14. A group of boys, most of them ten years old, are playing a game in which the object is to throw one ball in the air and hit it with another ball.

15. Both girls and boys about nine and ten years old enjoy throwing a basket ball through hoops fastened horizontally to poles.

16. The following games proved popular in the indoor playrooms. Nearly all illustrate the principle of rolling or throwing objects through holes:

Aiming bean bags at an inclined picture board where three frogs are sitting. If the bag hits a frog's head, it touches a spring which lets the bag through a circular trap door; if not, friction makes the bag adhere to the board.

Shooting toy pistols, with corks attached, at pictures of three rabbits seated on stumps.

Playing faba gaba with a homemade board.

The marble box game and the hoop and bell game invented by children also belong in this class.

Down and Out. A popular marble game consisting of rolling marbles down a spiral tube into holes marked with numbers from one to twelve.

This game is especially popular with girls. Six-year-old children enjoy merely rolling the marbles, while children from seven to nine years old play for scores.

Tiddledy Winks: a dish serves as a mark for shots.
Croquet: the wicket serves the same purpose.
Crokinole: here the mark is more varied.

4. *Rolling and Spinning Plays*

1. Babies are rolling balls and creeping after them; they are also twirling and bouncing bright colored balls attached to strings.

2. Some babies just old enough to creep are twirling small embroidery hoops on the floor.

3. Little boys sit twirling tops with a rotary hand motion. Older ones spin small hoops attached to strings.

4. A two-and-a-half-year-old child, whom the writer observed in a home, acquired considerable skill in twirling a teething ring on a heavy cord. He would beg his father to twirl it even more rapidly and would watch the movements with pleasure.

5. A group of three- and four-year-old children are sitting on the floor playing "Roll Over, Come Back Here" with a small basket ball.

6. Both boys and girls are rolling hoops; one boy has fitted together two hoops to form a hollow sphere; two other children are doing the same thing with four hoops. This leads to a new kind of hoop race in which the added problem of keeping the hoop-ball intact while running and whipping it adds zest to the race.

7. Some girls are spinning tin pans preparatory to playing "Spin the Platter."

8. Boys are twirling small wheels, which have come off the wheelbarrows, on strong cord; the object is to see who can keep the wheels going longest.

5. *Selected Games of Skill Involving Throwing, Rolling, and Spinning Movements*

In this account of selected games of skill, only a few of the best games are included. The writer's purpose is to show by analysis the important aspects of these games; in the analysis the appeal of movement will be considered first, followed by brief comment on the social and intellectual features.[1]

Tossing. — 1. Children toss balls together, playing individually, yet deriving considerable fun from running after the balls, dodging stray balls, and sharing achievements. Skill, speed, accuracy, rivalry, and display are features of the game.

2. *Balloon Ball.* — Children toss a large, light ball into the air and bat it upward with the hand until a miss is made, or bat it downward, striking each time on the upward bounce. Among the developments of this game are speed, accuracy of blow, and attempts at display.

3. Children toss or bounce balls to music, using simple, accented two-four and four-four time at first, later three-four time. There is increasing perception of rhythm in relation to accuracy and speed.

Tossing or Throwing at a Mark. — 1. Children stand in a circle and toss rubber balls into a large basket placed in the center of the circle. The game may be varied by tossing sometimes singly, sometimes all together. Display, attention, accuracy, and skill are involved.

[1] See Zach McGhee's analysis of games in "A Study in the Play Life of Some South Carolina Children," *Pedagogical Seminary*, Vol. VII, pp. 469-478.

2. A hoop is suspended with bell attached in such a way that the bell falls into the center of the hoop. The children attempt to hit the bell with a ball or toss the ball through the hoop without touching the bell. In this game enjoyment of acquiring skill is evident, also rivalry and display.

3. *Bean Bags.* — Marks are set up or circles are drawn on the ground. Bean bags are tossed at the marks or into the chalk circles. A score may be kept if desired. The chief enjoyment is in the movements connected with throwing, in skill, in rivalry, and in display.

4. *Straddle Ball.* — The players form a circle astride, touching the feet of players at each side. One player stands in the center and tries to throw a basket ball between the feet of any two players or between a player's feet. When he succeeds in doing this, the player under whose feet the ball passed or the player to whose right the ball passed must exchange places with the center player. The chief interest is in agility, rivalry, combat, and strategy.

5. *Human Target.* — One child becomes a target standing in the center of a group of players. The others pass a basket ball around among themselves and throw it at the center player. When a player receives a ball he must throw it from where he stands. If in a poor position for a good shot, he can throw the ball to someone near the target. A new target replaces the center player when he is touched or hit by a ball. The chief interest in this game consists in throwing, suspense, strategy, skill, and rivalry.

6. *Straddle Ball Relay.* — Children are formed into two lines, each player standing with feet well apart and directly behind the one in front. At the sign "Go," the first player in each line throws a basket ball between his feet and down the line between the feet of all the players. The last players in the line pick up the balls and run to the head of the lines, repeating the throw. When every player in the lines has done this, one after the other, the race ends. The chief enjoyment is in agility in throwing and running, in coöperation, in rivalry in combat, and in suspense.

7. *Bandy-Ball.* — An old English game similar to golf. Children use "bandies," sticks bent and round at one end, to drive a small wooden ball to fixed points. Accuracy of aim, rivalry, and competition enter into this play.

8. *Roll Ball.* — A row of holes in the ground is assigned to players. One player takes a ball, stands off, and tries to roll it into a particular hole. The player into whose hole it has rolled seizes the ball and throws it at the other players, who scatter to avoid being hit. If he succeeds it hitting someone, a stone is placed in the hole of that player; if not, the player must put a stone in his own hole. Any player accumulating five stones is out of the game. Competition in skill and resistance account for much of the pleasure in this game, also a desire to star, rivalry, manipulation, and a sense of humor.

9. *Arch Ball.* — The children form into two lines. The head player in each line throws a basket ball over his head into the hands of another player, who has his hands in receiving position over his head. This

player repeats the throw to the one back of him. When each player has had a turn, the race ends. Agility in throwing and running, coöperation, rivalry in combat, and suspense make this a popular play.

Rolling the Ball. — 1. Children sit in a circle and roll or bounce the ball back and forth to each other. The play is varied by using songs describing the time to roll and to send back; or by using balls of different size and weight which, because of this variation, demand different strength to handle. Interest is in being "it," a sender or a receiver, in skill and accuracy of aim, and in manipulation. Where words are used, language interest also enters in.

2. *Hot Ball.* — The children pretend the ball is hot and hit it back and forth in a circle, using a quick, sharp blow of the open palm. In this game, enjoyment in speed and accuracy of aim is enhanced by humor, rivalry, and agility in securing a turn.

Rolling at a Mark. — 1. Children sit in a circle and roll several balls, one at a time, into circles drawn on the floor, or roll the balls at towers built of blocks. Those who have sufficient accuracy of aim to stop one or more balls within the chalk circles, or to hit the towers, win another turn. Here we see interest in skill, rivalry, humor, and display.

2. *Tenpins.* — Tenpins are set up and children bowl at them with small wooden or hard-rubber balls. Scores can be kept if desired. The chief interest is in the physical activity of rolling, although some interest in competition and display enters in.

Spinning. — 1. *Spin the Platter.* Children sit in a circle and take turns in spinning a platter. This

may be varied by using an embroidery hoop, a small wheel, or a top. Those who spin longest get another turn. The chief interest here is in passive enjoyment in motion and in making spinning movements. Skill and competitive interest are involved.

2. *Spinning Buttons.* — Large buttons are spun on a string. Contestants are arranged in pairs. Here we see passive enjoyment in contemplating motion as well as pleasure in manipulating the string, together with love of display and competition in skill.

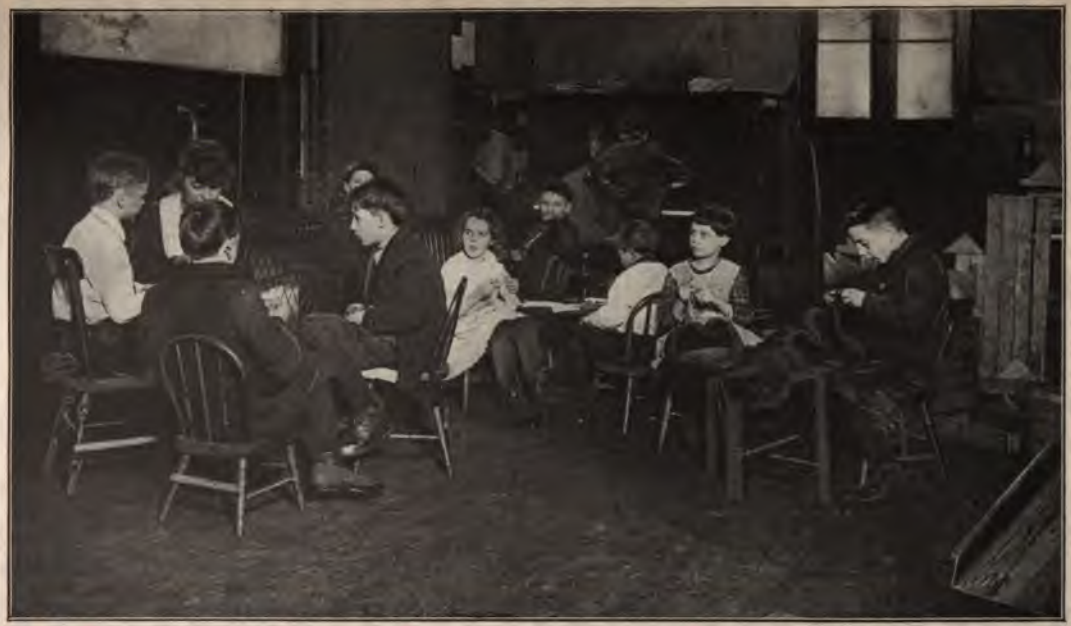
CHAPTER XX

THE SIGNIFICANCE OF MANIPULATION AS A PLAY ACTIVITY

What is Manipulation? — A little child, uninfluenced by training, pokes, pulls, scratches, and otherwise handles many objects with which he comes in contact. By manipulation we mean the sum total of these movements or any one of the various arm, hand, and finger movements made in response to objects in the environment.

What is Its Significance Among Original Tendencies? — At first sight these instinctive puttering movements seem to accomplish little, although they appear to have a certain satisfyingness. We have all watched the apparently aimless reach-grasp-put-in-the-mouth movements of infants, and are familiar with the eager *fingering* of children, who poke and maul most objects within their reach. These responses are really instinctive, even though they appear less definite than some of the other inherited tendencies. In speaking of the apparently aimless appearance of manipulation, visual exploration, and vocalization, Thorndike says: "But a more critical consideration of the behavior will show that it is conformable to the general type of a connection of a definite response with a definite situation, perpetuated in inheritance by its utility." [1]

[1] E. L. Thorndike: *Educational Psychology*, Vol. I, p. 136.



Pittsburgh Bureau of Recreation

PLEASURE IN MANIPULATION IS THE BASIS OF MANY CONSTRUCTIVE ACTIVITIES

Manipulation is Pleasurable. — To see, hear, feel, and make things happen to materials and objects in their environment is the source of real satisfaction to children. Sand is to feel, throw, and mold; wood is to pound with, to carve, and build into toys; toys are to do things with, and are the more satisfactory if they can be taken apart and adapted to a never-ending variety of uses. Such activities are ends in themselves; keen indeed is the pleasure of being a cause of the changes and uses of things in the physical world.

Its Educational Significance. — The aim of finger play is knowledge, and all these seemingly indefinite hit-and-miss handling movements of infancy and childhood are links in the long chain of human experimentation, necessary as a means of finding out the truth about natural forces and materials, essential in order that this environment of ours may be remade and adapted to the constantly progressive demands of man.

Manipulation Affords Training in Sense Perception. — Practice in handling things gives a greater power of discrimination in all departments of sense perception. Children acquire the power of attention and gain practice in noticing things and their qualities. They discriminate between hard and soft, among colors, curves, and straight lines. This original tendency to manipulate keeps children constantly active where things are concerned. When their movements are inaccurate, they are penalized by accidents. They learn to feel again, look again, touch again in order to get clearer reports of objects

and to adapt objects to their purposes. A wonderful field of sense training is thus the result of a free use of manipulation. Such admonitions as "Don't touch! Don't handle!" run contrary to brain-set and muscle-set in childhood. In nine cases out of ten, penalties fail to stop destructive acts of manipulation. What child does not cut his own hair, riddle clothing with a knife, unjoint dolls and animals, break glass to bits, bend wire and convert plastic materials into new forms and shapes?

It Affords Social Training. — After the first crude handling of infancy has passed into touch experimentation and construction, manipulating activities demand a social situation in which to develop. Coöperation is necessary in most manipulative and constructive plays of childhood. Children need guidance and leadership as well as coöperation from other children, for impulse and skill are often far apart. This necessitates a give-and-take of experience which constitutes the principal social gain from constructive activities.

It Affords Economic Training. — As the manipulative activities of childhood expand into constructive work with all kinds of plastic materials, they become valuable as ends in themselves. They should not be considered as a means of vocational training. The chief economic value lies in the habits and attitudes formed rather than in the specialized training received. Dewey has shown constructive activities as correlation centers in which the child's social feelings are tied up with economic and industrial needs and processes. One of the chief causes of industrial unrest

is that the worker lacks social training and an intelligent understanding of his economic adjustment to labor. If the first constructive activities are socialized, a step has been taken in economic training.

It Affords Æsthetic Training. — The joy of creating or constructing is not necessarily tied up with æsthetic appreciation of the thing made. When a child makes a kite or a cart, or molds apples out of clay, he is often carried into enthusiasm because he enjoys doing something, "being a cause" of changes in the paper or wood or clay. However, he is more prone to æsthetic appreciation of his own work than of the work of others because of the effort he has put into it. If the play leadership is such that the constructive result has also some small artistic merit, the transition between crudity and beauty, utilitarian and æsthetic, is made more readily.

Sex Differences in Manipulative and Constructive Abilities. — A study of sex differences in any field brings us to the interesting conclusion that there is more variation in abilities among members of the same sex than exists between the opposite sexes. However, it is interesting to note, in regard to motor ability of the sexes, that in strength, rapidity of movement, and rate of fatigue men seem to have an easily measurable advantage, and in precision of movement a slight advantage. The only concern we need have in the field of play is to see that girls have wider opportunities for muscular experimentation than have hitherto been provided; for in every group of girls there are always some who can perform successfully many muscular feats men perform; there are others

who will fall far below the average for male achievement.

Manipulative Activities in the School. — Nearly all manipulative activities are included in courses in practical arts. The first six grades, however, do not teach the practical arts from the vocational point of view. The aim is to provide activity centers with which to correlate subject matter and to enrich the child's experience by giving him various contacts. The modern elementary school includes many of the practical arts in its curriculum; it has long been recognized that breadth of interest is more necessary during these early years than in the years to follow.

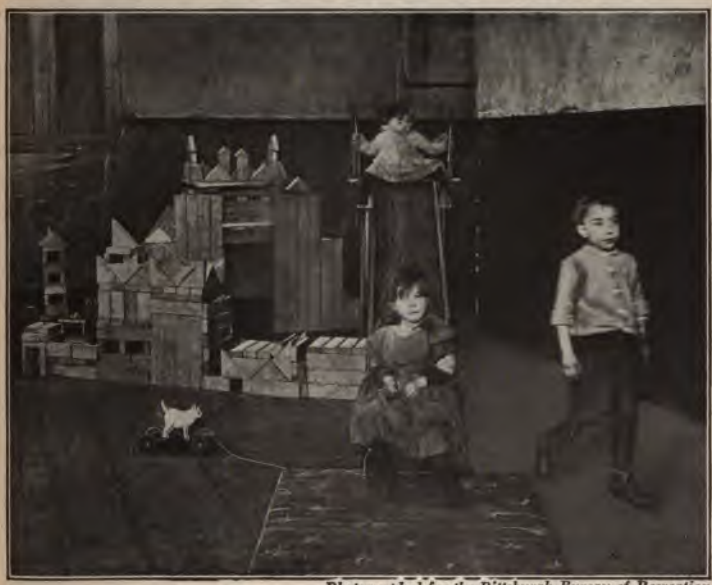
Principles Controlling Progress in Manipulation. — To plead for a psychological order of procedure in providing for manipulative activities seems almost unnecessary in the light of modern reforms in elementary education. It is not an uncommon thing to see children in progressive schools flit about naturally from one constructive activity to another; to see them lie flat on the floor as they play with blocks, or sit comfortably at low tables to mold with sand and clay. However, the rules of procedure in brief are as follows: (1) large, coarse movements should precede small, fine ones; (2) large materials such as sand, clay, large blocks, and large crayons, should be given before such materials as scissors, small crayon, and painting materials; (3) in all manipulative activities, work for the sake of expression should precede work for technique. Originality should not be expected until some technique has been gained.

The Project in Connection with Manipulations. — According to W. H. Kilpatrick, a project may refer to any kind or variety of life experience which is actuated by a dominating purpose. He notes four types of projects. It is with the first that we are especially concerned as we study manipulations. "The first type represents those experiences in which the dominating purpose is to do, to make, or to effect; to embody an idea or aspiration in material form. The material of which the thing it made, in which the idea is to be embodied, may vary from clay, wood, cloth, and the like, through marble or pigment, to the words and thoughts and aspirations of a letter, a speech, a poem, a symphony, or a prayer. * * * The criterion for judging is the character of the purpose. Is there an idea to be embodied?"[1] The project may be very simple and easily accomplished, as when a child in the kindergarten decides to build a wagon in order that he may play store, and finally accomplishes this end the same day. It may be so complex that it requires the combined efforts of a group for a considerable period of time to bring about the desired result. All manipulative activities are not necessarily projects. To partake of the nature of projects they must represent purposeful planning where the aim is fixed, guide the means used to reach it, and furnish its motivation.

Constructive Activities. — Interest in manipulative or constructive activities leads to a large number of

[1] W. H. Kilpatrick and Others: "Dangers and Difficulties of the Project Method and How to Overcome Them—A Symposium," *Teachers' College Record*, Vol. XXII, No. 4, pp. 283-4.

experimentations. The constructive efforts of children take us far afield into life. Contact with earth, air, light, heat, fire, and water demand manipulation on the part of the child. Just as primitive man in his efforts to sustain life and procure for himself food,



Photographed for the Pittsburgh Bureau of Recreation

CONSTRUCTIVE AND MANIPULATIVE ACTIVITIES ACCOMPANY MANY DRAMATIC PLAYS

shelter, and clothing found it necessary to subdue and control natural forces and materials, so children, in their efforts to handle and discover, learn to make plastic materials serve their purposes. Children, however, learn to control such natural forces as sand, clay, and water not because of any outer compulsion

such as impelled primitive man to subdue them, but because of the inner urge to manipulate and handle. The writer regrets that the limitations of the written page necessitate a rather arbitrary classification of children's projects with sand, clay, water, etc. However, the records themselves show how rich and varied children's experimentations are, and how their thought breaks down the barriers of materials and circumvents the limitations of natural forces.

Learning through Manipulative Activities. — In their playful experimentation children learn much about the qualities of things, and discover the application of many natural and mechanical laws. For example, in gardening the child learns how to control conditions of heat and moisture. In building bridges, dams, and boats, he discovers the pressure of fluids and the laws of density, buoyancy, and specific gravity. In building fires, he acquires information about draughts and combustion. In experimenting with kites, windmills, and airplanes he obtains a knowledge of air currents and air pressure. In playing with mirrors and prisms, in blowing soap bubbles, and in making shadow pictures, he learns something of the reflection and refraction of light. In producing acoustic effects with toys such as drums, reed pipes, and whistles, he gains a practical knowledge of resonance and density of air. Many of the records involving manipulation, experimentation, and curiosity will show, better than any discussion can point out, the joy, manual skill, scientific knowledge, and social insight gained by children through play activities involving natural forces and materials.

CHAPTER XXI

Spontaneous Play in the Earth

Spontaneous Play in the Earth is Natural to Children. — The child of to-day shares with children of all ages the delight of playing with soil, sand, and clay. Without training he rolls, molds, pokes, and handles the earth. In all such play the natural impulse to manipulate is satisfied by doing something and having something happen as a result. The child likes to roll in the grass, pile up stones, dig in the moist sand with his hands and feet, poke holes in the ground with a stick, dig with implements, shape and mold clay into creations of his own fancy, till and plant the soil; in fact, he likes to test in multiform ways his power over materials and natural forces. Perhaps the following incidents will illustrate the spontaneous interest which contact with soil, sand, and clay affords children. The writer once observed some street-cleaners deposit a pile of sand in front of a house. Instantly all the children of the neighborhood congregated on the spot, and all during the day numbers of them worked like busy bees digging, molding, and building in the sand. At another time the author was visiting a playground located near the banks of the Monongahela River in Pittsburgh. The children had discovered a natural clay bed and were wild with interest in molding and shaping the moist clay. Some of the children made cups, saucers, plates, plat-

ters, and fruit baskets, putting them into immediate use on a hastily improvised tea table. Others set up a box for a counter and started a store. They did not care to sell, so occupied were they in making things and arranging them on the counter: cabbages, apples, pears, plums, potatoes, loaves of bread, sticks of candy — all made of clay. For more than two hours these children played happily and constructively. As an example of spontaneous gardening we have but to recall the story of the boy who dug up the grass and sod on a beautiful lawn, in order to plant some grass seed, which he carefully covered with loose earth.

Play in Sand. — From the time when the baby begins to sift sand through his tiny fingers just for the satisfaction the "feel" of it affords, through the years when sand serves as a medium for reproducing the environment,[1] a sand pile should be easy of access to the growing boy or girl. As Joseph Lee says: "Children never tire of it. The very day of their return from the seashore, where they had lived actually on a sand beach, they rushed out and began playing with the sand box as if they had never seen a handful of such material before. The reason, of course, as I have elsewhere stated, is that sand is plastic to their hands, and more, that it takes the form they imagine for it, instead of following some preconception of its own." [2]

Community Work in the Sand Table. — Of community work in the sand table, Dr. Gesell says the

[1] See G. S. Hall's "The Story of a Sand Pile," *Aspects of Child Life and Education.*

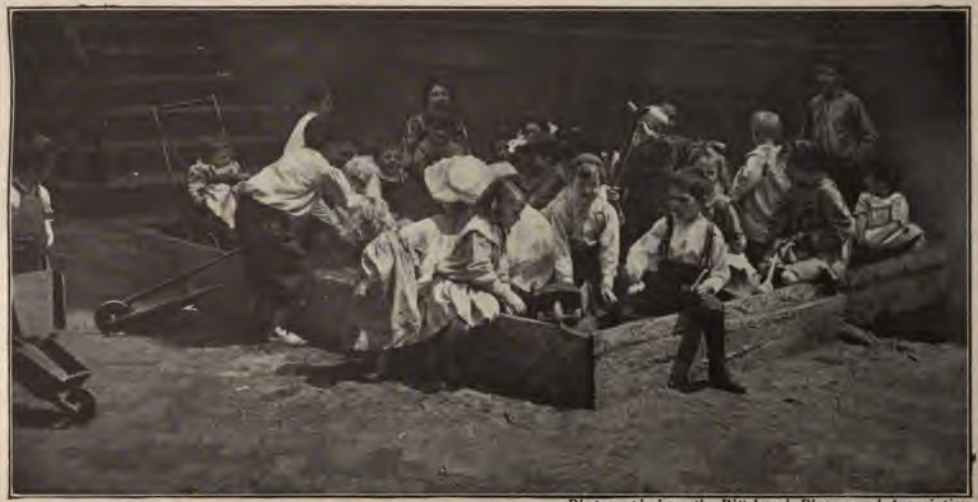
[2] Quoted by W. B. Forbush: *The Manual of Play*, p. 13.

following: "Each child may have a part in building the farm, the Indian or the Eskimo village, the circus or store. Community work and a common responsibility establish a feeling of comradeship of which the schools are sorely in need. It gives an opportunity for just comparisons and mutual suggestions. The children will work in pairs or in groups of three or four, solving their problems independently, but being obliged to conform to the general purpose or plan." [1]

The Scope of Representation in the Sand Pile. — As the records show, almost any experience vital to childhood is represented in the sand pile, with or without the addition of other materials. Farm life is depicted, parks and zoos are laid out; fruit stands, bakeries, and stores operate on busy streets; circus tents are set up and the menagerie is installed on the grounds; soldiers' camps are constructed and war carried on. It matters not whether the ideas dramatized are gained through history, literature, or in the everyday walks of life, all are realistically played out. The records presented show the type of spontaneous sand play which occurs on a playground. Where smaller groups of children play together, better educational results can be obtained than where the sand pile is congested. The presence of a play leader insures progress. She clarifies and enlarges the children's ideas through suitable suggestions or through the use of stories or pictures.

Materials Used in the Sand. — Children of two and three years of age need few materials for play in the sand. They enjoy sifting the dry sand through their

[1] *Ibid.*, p. 14.



Photographed for the Pittsburgh Playground Association

A Congested Sand Pile

fingers, heaping it loosely in piles, throwing it about, and burying their hands deep in the sand. Given shovels, pails, and spoons they occupy themselves for hours filling buckets with sand and emptying the sand out of the buckets. They also enjoy sifting sand through cans with perforated tops. When the sand is moist, young children soon learn to pat little cakes in the hollows of their hands. Later, after they have acquired skill in doing this, sand molds of various sizes and shapes add zest to the play and suggest new possibilities. Children of kindergarten age usually mold with their hands trees, roads, houses, and figures. It is possible to purchase a tin village for sand modeling. This set consists of hollow figures of houses, trees, and other objects. After filling the forms with moist sand it is possible for children to transfer these molded forms to the sand table. Wooden stencils for molding in the sand are also procurable. These are used by the children to transfer pictures into the sand. For printing in the sand there are boxes of raised letters.[1] Molds of fish, birds, animals, and of various geometrical patterns are to be found in nearly every department store. A wooden sand mill with a wheel which turns around by the action of the sand is also much enjoyed by the children. The writer has a vivid recollection of playing for hours in her childhood with a sand mill made out of a tin can perforated in several places so that the sand kept running out by the force of gravity. It is evident to anyone who has watched children play

[1] For suggestions on sand toys see W. B. Forbush: *The Manual of Play*, p. 298.

in the sand that they are ready and willing to invent their own materials as the need arises. The records will show how cannon were made out of old window-shades; trees and flowers, from twigs and tissue paper; soldiers, out of clothespins dressed up; a menagerie out of waterproof roofing paper; ducks, fish, and frogs were cut from paper and mounted on corks so that they would float on water; houses were constructed of blocks, boards, and spools; and wagons, telephones, and street cars were hastily improvised out of cardboard boxes, spools, ribbon bolts, collar buttons, and milk-bottle tops. A tool chest and boxes of sewing material are indispensable aids in meeting emergency calls for materials to enhance dramatic and constructive play in the sand.

How Play in Sand Correlates with School Subjects. — The sand pile presents opportunity to the teacher for constructive suggestions in the use of number through collecting the objects molded and arranging them in groups; in art, through the forms molded; and in physics, through the control of physical laws in constructing with sand. Miss Frances McGough mentions some of these possibilities in an article on "The Sand Pile — Its Use and Care":

"The next development is that in which the molded sand is turned out of the mold for further play. The handling is no longer an end but a means by which the child is enabled to weave innumerable imaginative and imitative plays. The boy becomes a grocer and weighs out sugar for his customers. The girl is a homemaker and the sand becomes sugar, flour, tea; in fact, anything which it in any way suggests. Who

has not made mud pies, and perhaps tried to eat them? In connection with the store plays, counting and measuring plays spring up. Buying and selling sugar and similar commodities call for weights and measures. The words pint and quart begin to be heard, although the vessels which the child uses to represent these measurements are very diminutive. When the children begin to do this the teacher may use the opportunity to introduce real measures. Crude scales are also used for weighing. The baker sells cakes by the dozen and half dozen. Artistic tendencies exhibit themselves through the efforts of the children to obtain and use prettily shaped molds for their cake-making and through attempts to decorate the cakes with pretty flowers, pictures traced in the sand with sticks, or designs of small pebbles." "Older children, especially the boys, delight in plays that show the operation of physical laws. They delight in crudely constructed sand mills. They have been known to spend hours in the construction of a gravity road, down a winding pathway on a mountain of sand. If the curve of the road or the inclination of the slope is not just right the marbles go over the side instead of rolling down the pathway made for them. There is a feeling of real triumph when the road is just right and the marbles at last go racing round the curves and finally reach their resting place at the bottom." [1]

How to Construct Sand Boxes, Trays, and Bins for Home Use. — In the modern home there is often need of economy of space even where a nursery is

[1] F. McGough: "The Sand Pile—Its Use and Care," *The Playground*, Vol. IX, pp. 160-169.

A Demonstration Playground at Exhibition Hall, Pittsburgh

SAND-BOX, MERRY-GO-ROUND, SPRINGBOARD, AND SEE-SAW FOR SMALL CHILDREN

installed. If a kindergarten sand table is used, a table top can be put over it whenever the use of table space is desired. Window seats can be so constructed that zinc-lined sand trays may be fitted in near the top, while a space for toys remains below; doors opening up in sections on top make the sand trays available for use, and when closed form the window seat. Sand trays may also be built under the floor by cutting a sectional door in the floor. Care to cleanse the sand by frequent exposure to the sun is quite necessary.

The outdoor sand pile should have both shade and sun, because if there is no sun the sand soon becomes unsanitary, and if there is no shade the sand becomes hot and baked in appearance, and the children uncomfortable when using it. A tree affords the best kind of shade for a sand pile; it is cooler than the canvas shades sometimes stretched on frames above the playground sand piles, and affords an ideal combination of shade and sun. Any building sand or bank sand will prove satisfactory, although, of course, the white sand of the seashore is best. The sand bin may be built of any desired size; twelve-inch planks make a sufficiently deep box. A ledge about eight inches wide should surround the box. This may be used as a shelf on which to mold cakes or to display wares in store plays.

Gardening

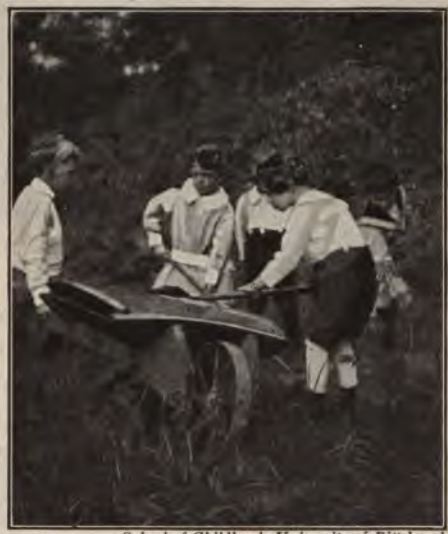
The Appeal of Gardening. — Digging in the soil is almost an instinctive pleasure with children. It seems to appeal to nerve cells in some way that makes for relaxation and emotional contentment. Children

like to dig and scratch in the soil and, until taught to protect and nurture growing things, they often uproot and demolish. From this genuine interest in digging in the soil it is but a step to planting and gardening. Native curiosity often impels busy hands to dig up what they have planted that eager eyes may search for the first signs of life. To meet this instinctive interest in digging and planting, many playgrounds have established community gardens in the neighborhoods near by. In these gardens each child may have his own plot, and dig, plant, and nurture, aided by the wind, rain, and sun.

There is something so elemental and primitive about children's enjoyment of digging and planting that we need to give it more serious consideration.

The Educational Content of Gardening. — Gardening is rich in educational content; it affords rich contacts and gives children of different ages a chance to learn about nature through working with her, applying her laws, and observing the wonders she creates. It is the "doing" side that is important. However, the knowing side should not be left out of consideration. As a means of understanding the harvest, our source of food supply, the home and school garden offers a center of correlation. Excursions to enlarge the child's conception of the harvest, the marketing of crops, transportation, prices, and cost of production, all bring a better understanding of the significance of gardening. There are many approaches to gardening, all of which have a point of contact in play and a significance in education. First, there is the æsthetic side, the interest in beauty of color,

form, and design. Then there is the appeal of neatness and orderliness; through raking up leaves and burning weeds, children learn the value of tidiness in a garden. The economic side also has some educational importance. Children like to use what they grow and thus come to know the relative economic values and uses of various herbs, fruits, and vegetables. The scientific interest is perhaps of paramount importance. Through caring for plants, children learn the life cycle of each plant and its habits of reacting to various kinds of soil, temperature, and rainfall. The hand that manipulates, the eye that observes, follow the trail of the scientist and formulate laws by direct observation of cause and effect.



School of Childhood, University of Pittsburgh

PLAY IN THE EARTH

Playing with Clay

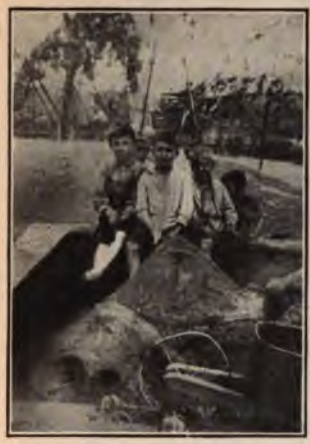
The Appeal of Clay. — Did you ever see a group of children yield themselves completely to the enjoyment which play with clay affords? It is probable

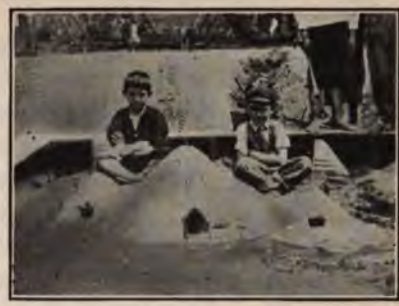
that to shape and to mold this soft, yielding substance is instinctively satisfying. The instinct of manipulation and the love of workmanship, inherent in original nature, combine to make the appeal of clay immediate and universal where children are concerned. One has but to walk along the crowded beaches at any summer resort to observe the tendency common to adults to poke, handle, and mold damp sand into shapes the fancy suggests. It is as if surplus nervous energy were discharged with resulting freedom from strain. Children sometimes quiet down instantly as they yield themselves to the enjoyment which results from externalizing their ideas and feelings in molded clay.

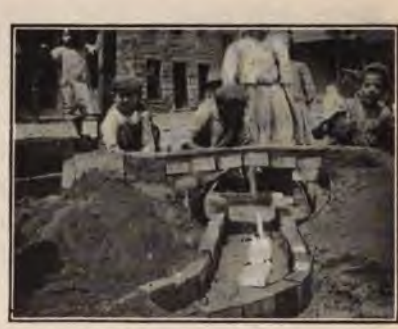
The Educational Significance of Clay Molding. — This study does not aim to apply the values gained in observing spontaneous play to subject matter of the elementary grades. In regard to the universal use of clay in public schools it seems necessary only to point out the wide range of experimentation which has resulted in courses in the practical arts.

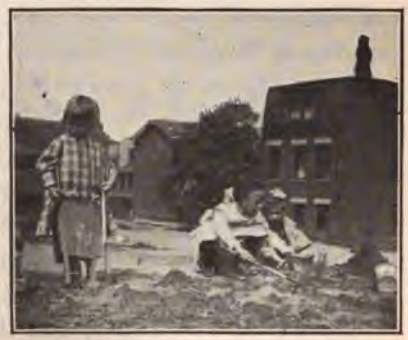
Records of Sand Plays

Play in Dry Sand. Washington Park. — One day a new sand table appeared in the Washington Park playroom. The small children from two and a half to six years old gathered quickly around it and began to handle the dry sand. Some of the smallest children delighted in sifting the sand through their fingers: one child said it was salt; another called it sugar. They enjoyed burying one hand by sifting sand from the other hand gently over it. Other









PLAYS IN THE SAND

children started at once to pile up the sand; two or three connected their piles. Some dug wells. Others made sand piles of varying sizes and dug holes in the tops for chimneys, evidently intending to make houses. One child built a large sand pile and called it a mountain, tracing a railroad track around the base.

Carrying Sand. Washington Park. — By mistake, a load of sand was dumped on the ground instead of in the sand boxes. The children played they were expressmen and street cleaners. For several days they shovelled the sand into small wheelbarrows and carted it to the boxes. One child played "boss" and directed the work of the others.

Houses. Lewis Playground. — Each child in the group made his own house and yard in the sand box. Some built walls around their houses; others surrounded them with fences. The houses varied in size and appearance; some had doors, chimneys, and steps shaped in the wet sand; a few houses were built of sand and blocks together; these last were larger and stronger than the others. Nearly all the children gathered grass to put in the yards.

Farmyard Play.[1] — One day a group of children made a farm scene in the sand table. The following morning a little girl brought a tiny wooden dog to guard the farm. Other animals were contributed and the children had great fun making the animals walk in and out of the farmyard gate. They said the dog could live in the house, but the cow, horse, and sheep must go to the barn. As the first barn constructed

[1] From the records of Edith Murray.

was too small to hold all the animals, a larger one had to be built. They planned a barn in which there was room for all the cows and the horse; they also built separate kennels for the dogs, pens for the pigs, and coops for the chickens.

Gardens. Washington Park. — A group of children made gardens in the sand. Each child marked off a space for himself. He next asked for some tissue paper, and twisted small pieces of it into flowers; these he planted in straight rows and circles, using green, blue, and yellow in various combinations. When these small gardens were finished several children made a large park and built a fence of blocks around it.

Gardens and Farm. Sullivan Playground. — One day the children became much interested in making gardens in the sand; this interest grew into the laying out of a farm into fields, orchards, and a house. Then the children seemed satisfied and proceeded to play farmer. They loaded the wagon with grass to represent hay, pulled it a short distance, and then unloaded it in the barn. After loading and unloading several times it occurred to them to unhitch the horses.

In this simple little play, the loading and unloading seemed to be the chief point. Interest in constructing the farm and wagon was subservient to the playing out of a little drama, representing some familiar events connected with farming.

Park and Zoo. Wickersham School Playground. — Some of the children had been taken by their parents to picnics at Kennywood and Highland parks. On the playground the next day they built an amusement park, laying out car tracks and constructing a roller

coaster and shoot the chutes. They hollowed out a lake, filled it with water, and put paper boats on it. After they had sailed the boats a while, it occurred to them to make a zoo. They decided this should not be near the car tracks, lest the animals be frightened. So they selected a quiet corner of the park and dug caves for the different animals. This play continued for several days.

Fruit Stand. Arsenal Park. — The children molded wet sand into apples, pears, and peaches, using twigs for stems. They arranged these on a board for a fruit stand and sold fruit to passers-by.

Beehives. Ormsby Park. — One day the children made beehives in the sand by covering cubes with damp sand.

Street Life. Ralston School Playground. — A very quiet business street was represented, having a meat market, grocery, bakery, and bank. Next, a residence street was laid out exactly parallel to the business section. Homes were built along both sides of the street; telephones were put up and business flourished for some time.

Baking Day. Soho Club Playground. — A group of small children made cakes of various shapes by molding wet sand in tins. They arranged the cakes in rows on the board. One little girl said she had a store and called to some other children to come and buy some of her cakes. A boy who was building an elaborate house of blocks came over to buy; then he went back to his building again. The play leader suggested that he might telephone for the cakes next time, since he was so busy. He looked pleased and

quickly grasped the necessity of putting up a telephone system between his house and the bakery. He found two sticks which served as poles, and some string which he used for the wires. It proved great fun to shout out his orders; so much so that a group of older boys and girls gathered around the sand pile to set to work building similar houses and telephones. This led to more telephoning, which kept the girl in the bakery so busy that she called on another girl to bake cakes while she answered the telephone. A small boy offered to deliver the cakes; this necessitated his building roads between the houses. When he had laid out a complete line of roads, he took an oblong block for a wagon and pushed it around from house to house, leaving a cake at each house where a cake had been ordered. This play continued nearly all of one afternoon.

Schenley Park. Lewis Playground. — One day a group of boys laid out Schenley Park in the sand; Carnegie Library and Phipps Conservatory were constructed of blocks and somewhat resembled these buildings. Another group of boys made a train shed; tracks were laid out and a train constructed of blocks was pushed along the tracks and under the tunnels.

Burying Play. Lewis Playground. — A group of boys had great fun all one afternoon, burying each other, all but their heads, in the sand.

Caves. Sullivan Playground. — Some boys from ten to twelve years of age became much interested in making caves. As they gained experience in surmounting the obstacles of construction, the caves grew larger and more substantial. One day all the older

children joined in making one large cave. They used blocks to strengthen the walls, cementing them together with sand. They called this cave a fort and selected soldiers to act as guards. The smaller children wanted to crawl into the fort, but were not permitted to do so by the guards. These little ones then made forts of their own, building a deep trench between their forts and the big one.

Park. Mt. Washington School Playground. — An elaborate city park was made, also a street car line. Lights were put up all along the car track; string was used as overhead wire for the street cars.

Tunnels, Bridges, and Ponds. Washington Park.— About a dozen children were playing in the sand; some made tunnels, bridges, and houses; others buried pails in the sand to represent ponds and watering troughs. This suggested bringing animals to drink, and the rubberoid animals were taken to drink. The children decided that these animals must have a place to live; so large stables were built in the sand. The stables were soon full of occupants.

Parks. National Tube Company Playground. — All the younger children worked together to make a park in the sand. They laid out walks, circular and straight, and designed flower beds of various shapes. For flowers they twisted up bits of brightly colored tissue paper, for trees they set out twigs and small branches. The swings they constructed by fastening a crosspiece to two upright sticks and suspending rope swings from the crosspiece. In these swings they placed dolls cut from manila paper. The play leader cut a ring of dolls hand in hand. This pleased

the children very much; they said the dolls were playing "Ring Around the Rosy." After the children had given the dolls a swing they decided to make a roller coaster. This was modeled out of sand, a spool box serving as a car. Then the dolls were taken the round of the park, some to swing, some to ride on the roller coaster, and some to look at the flowers.

Park Attractions. Andrews School Playground. — A group of girls molded the Old Mill of Kennywood Park, also the roller coaster. The last was elaborately represented with a double track leading down slopes and hollows. For many days different groups of children worked out this scene in various ways, adding a lake, café, and other details. One day two leaden Indians were placed on the crest of the slope to act as spies. This changed the entire character of the play.

Circus. Arsenal Park. — Some of the children had been to a circus. They wanted to cut out animals, so the play leader brought patterns and let them trace and cut tigers, elephants, bears, lions, and giraffes from rubberoid roofing. The next day the children brought boxes of various sizes and made cages for the different animals by cutting slits along the edge of the top and bottom of each box and running wooden slats through the slits. They put each animal in a suitable cage and then surveyed the results. The outdoor sand box was decided by all to be the best circus field. The children carried the cages there and arranged them to face out along the four sides of the box. One child opened a ticket office. Any child purchasing a ticket was allowed to walk around the circus field to see the animals.

Forts. Washington Park. — The children made a big fort in the sand. They built the fort with oblong blocks and fortified its inside walls with sand shovels. Pieces of lath formed a barricade, beneath which they dug a ditch. This was done by a few boys, who, in order to complete their fort, took the blocks away from the smaller boys. These smaller boys organized themselves into a band, built a sand fort, and had a battle with the older boys, getting some of their blocks back again.

Forts. Arsenal Park. — Several boys became interested in making long mountain ranges with tunnels penetrating lengthwise and crosswise; then they built forts. One large fort was hexagonal in shape; the boys called it Fort Duquesne. Another was oblong, modelled from the Arsenal Park House; it was called Fort Shelby after the commander, who rode around the park and stopped every day to watch the children. Flags waved from these forts; fine roadways led up to them, and earthen breastworks protected them. Towers of blocks served as lookout stations for sentinels. Ends of old window shades were rolled up to represent cannon and were placed in the lookout holes along the sides of both forts. Near by, the boys set up an Indian camp; the wigwams were made of rag paper. A general war followed between the paper soldiers and Indians.

Pike's Peak. Andrews School Playground. — The children made an enormous hill which they called Pike's Peak. A car line was built around it and passengers were taken up to see the sights.

Soldiers' Camp. Lawrence Park. — A high hill, at the bottom of which stood a row of tents surrounded by a sand wall, was the soldiers' encampment. Some little girls opened a bakery and sold pies to the soldiers, receiving paper money in return. At another store some girls sold paper badges, tents, and soldier caps they had made.

War between Indians and English. Andrews School Playground. — The English forts were built of blocks and fortified with cannon. The soldiers took daily gallops astride brooms. The Indian village was in the sand pile; the Indian wigwams were made of brooms arranged in tent shape and covered with brown paper. A wooden box was the Indian canoe; a broom, their paddle. Every day one of the English soldiers mounted his horse and rode after the mail. One day be brought back a piece of wood on which the Indians had written a declaration of war. Both sides prepared for war. The Indians won the first battle, the English the second. Both sides seemed willing to take turns at losing.

Houses, Forts, and Airplanes. Lewis Playground.— Some girls built rows of houses, surrounding each house with a picket fence made of sticks. The boys made elaborate forts with flags flying from the summits; paths led from the forts in all directions; paper soldiers stood at the lookout posts and other soldiers appeared to be ready to fire paper cannon. A group of boys suggested that an airplane was needed; so one was made to fly about the forts to afford protection from the enemy.

Outline Pictures in the Sand. Lewis Playground. — After a rain which left the sand hard and moist the children started to draw pictures. First they patted and pounded the sand into a smooth, slate-like surface. They drew outlines of houses, barns, trees, flowers, chickens, coops, hens, and pigs. One child drew a flag. Another child laid out a rough but good map of Pittsburgh, with the two rivers coming together at the point near the block house and with Penn Avenue running fairly parallel with the Allegheny River and Second Avenue with the Monongahela.

Goldilocks and the Three Bears. Wickersham Playground. — Some little girls made a park showing a lake with a few paper boats sailing on it. Flowers were made by pinching sand between the fingers. The flowers suggested the story of Goldilocks and the Three Bears. "Here she was lost while picking flowers," they said. The park became the woods where the three bears took their daily walk. A house was built of sand and Goldilocks' experiences in the three bears' home were played out most realistically.

Washington Crossing the Delaware. Arsenal Park Playground. — The children had enjoyed working out a large puzzle representing the famous picture of Washington Crossing the Delaware. One day when playing in the sand, a boy made a boat out of sand and assembled on its decks guns (clothespins) and paper soldiers. Other children became interested and offered to build forts along the shore; these were very carefully built forts guarded by soldiers and guns and connected with the shore by means of drawbridges.

A deep trench surrounded the fort. The sand was left loose and rough to represent ice. The picture when completed pleased the children very much.

A Battlefield in the Sand Pile. Adams Market Playground.[1] — It was nine o'clock in the morning, the beginning of a bright summer day. We were in the heart of a congested business district in Pittsburgh, where every inch of space is occupied, save a narrow lot granted by the city as a breathing spot for the children living in the crowded thoroughfares and alleys of this district.

From all sides the children came flocking in, some happy and buoyant, others sullen and ill-tempered; yet all eager to play. I decided to wait and utilize any interest that might spring up. The toys, buckets, shovels, and other play materials were brought out; as usual, the sand pile attracted the greatest number of children, who were scattered in loose groups over the field. "Let's build a fort," was the proposal of some boys. At once all became interested. In a minute the sand pile was cleared of pails, shovels, and babies and the blocks were carried, wheeled, and flung upon the field of operation. The boys divided themselves into two groups, one taking charge of the building of the fort, the other establishing some sort of arsenal or workshop where the equipment of the fort and the camp ground was planned and carried out. A strong and substantial fort was built of wooden blocks with windows just big enough to permit the sending of bullets and cannon-balls. At

[1] This play was supervised, recorded, and contributed in the present form by Mrs. Hermine A. Johnson.

one side a flower garden was laid out and enclosed by a fence made of clothespins. A deep ditch, spanned with several bridges, divided the sand pile along its whole length into two parts. The boys were working on both sides, adding, improving, and changing according to their ideas.

So far everything went smoothly and no thought of using the encampment as a battlefield entered the boys' minds. Yet war was close at hand. Some ditch diggers had come into too close contact with a group of other boys who were making a fort on the other side and the two sides began to quarrel about the territory. The clashing of shovels and words called me to their side and I overheard two boys saying to each other, "They are British; let's beat them." In a minute the sand pile became the scene of feverish activity. Two hostile battlefields were forming—here the Americans, there the British. The spirit of '76 had taken possession of the sand pile and the Revolutionary War was to be lived over again. Most strenuous efforts of attack and defense were made on both sides; intrenchments were thrown up and barricades built. It was very evident that the enthusiasm of the English side did not keep pace with that on the American side and by and by the majority had left the British forces. I asked the boys if they thought it fair to desert their posts, but they declared the English must not be strong, "for we are going to beat them." Meanwhile the workers in the arsenal had not been idle. Tents, flags, and cannon were constructed and sent out to their place of destination. When the tents appeared they were objected to. "They are no

good," the boys said. "They are Indian tents." The defect was soon remedied by placing an American flag on top; the tents then met the approval of the critics. These tents were placed in rows of five; flags were arranged on the grounds of both British and Americans; yet the boys were careful to keep the best on the American side, while the ones of inferior grade were shipped to the British. The cannon were constructions of some ingenuity; a cylindrical box, two milk-bottle tops (for wheels), and a meat skewer put together made quite a realistic cannon of the primitive type. The boys stationed one cannon upon the highest point of defense; at once the necessity of a soldier behind the cannon was keenly felt and word was sent to the workshop to produce such a soldier. In response a paper soldier was cut out and brought over, but he stood so weakly on his feet and looked so little the part of a man of strength and courage that he was scornfully rejected and soon disappeared. Then some bright boy ran to the flower garden and came back with a clothespin, which he planted beside the cannon. This soldier at least had the qualities of strength and steadfastness, but he could make nobody believe he was anything but a clothespin. So he had to go to the arsenal for transformation, and transformed he was when he came back, on his head the typical George Washington hat and in his arms a gun which pointed directly toward the camp of the British. In a moment all the clothespin fence rails were unearthed and transformed into an army of warriors, or rather into two armies, for some regiments were sent over to the British side. The two armies

were easily distinguishable by their differently colored caps; the Americans wore blue, the other side white caps. Meanwhile other work had been going on in both camps. A big Union Jack was hoisted on top of the British fort and smaller flags, targets, and signal boards were distributed everywhere. Both sides now were swarming with soldiers armed with guns and carrying flags. The intensity of the play began to reach a climax, new ideas springing up in close succession. "Here comes the Doctor," shouted a youngster bringing in a clothespin soldier on whose breast was plastered a red cross. "Watch the ambulance," was the next announcement; and in came a vehicle constructed of an oblong box with four wheels of milk-bottle tops, each side decorated with a red cross. The ambulance was placed by the side of the surgeon. As my idea of how a battlefield should be run was rather vague, the boys had often to explain what it all meant. "Here is a soldier with a white cap in the American camp. Why don't you keep him where he belongs?" I criticized. "Why, he is a captive," I was told. "And these soldiers haven't any caps on their heads at all," I objected. "They're shot off," was the prompt reply. Near the British fort I found a bridge, with two white-capped soldiers standing on top and two blue-capped ones underneath. "What are these Americans doing here under the bridge?" I asked. "They are — they are — what you call those men who sneak around to find out about the enemy?" "Spies," I helped out. "Yes, yes! They are spies. Do you see them hiding under the bridge? They can hear every word

the British say." In a corner near the American side I came across a small building with something looking like a steeple. "What's this"? I asked. "That's the church Paul Revere rode away from," said my informant. "And this man here, what is he doing down here in the ditch?" "It's George Washington crossing the Delaware."

"Come over here," said another boy. "I am building Independence Hall, but I don't know where to get the bell." I walked over to the venerable structure. "I will try to get one," I promised. But Liberty Bell was not to ring for us on the playground; in its stead all the noon whistles began to blow, calling the boys to dinner and thus causing an interruption in our work. "Don't let us break the fort up; save it all till this afternoon," was the general request. Two or three boys volunteered to watch until the others came back to take their places.

When we returned that afternoon we found the camp ground untouched, except that some little vandals had thrown a handful of oats among the tents. I asked the boys to pick up the oats; unfortunately this request was misunderstood and the boys took it as a signal for a general breaking up. In a minute sticks and stones were hailing down upon the battlefield, smashing indiscriminately the British and the American, sparing neither friend nor foe, neither the doctor beside the ambulance nor George Washington in the ditch. In less than a minute the work of three hours was undone, destroyed with the same zest and exultation with which it was created, and the boys who were the leaders and the main

workers were the first to tear down the labor of their own hands. I was stunned and perplexed for a moment; then I understood. During the whole morning the boys' activity was directed towards the one goal — the making of a battlefield. So far their work had been constructive, well planned, preparatory for things to come. This was one phase of their play. Now the other part had to come, for war means destruction, annihilation, lawlessness. All the morning this spirit of war had been lurking in their consciousness, ready to break forth as soon as the intensity of their work would relax. So, long suppressed, it now broke forth with a vengeance, sweeping everything within its reach. The battle had to come, and here it was.

CHAPTER XXII

Spontaneous Play with Fire and Water

Fire as Known Through Myths. — The fire myths of many races indicate the almost universal use of fire long before the annals of history. In myth generally fire is regarded as a living thing. "As, with primitive man, hunger and thirst are the natural enemies of his existence, and his chief source of misery or happiness, fire, food, and water became some of his earliest gods. * * * Fire especially comes to take a principal part in his life, though water worship seems to have preceded that of fire. * * * Besides warming him and giving him light at night, fire made his food taste better and digest easier. * * * The mysterious nature of the blazing fire, its apparently spontaneous creation, its decomposing power and perpetual self-motion, place it far above the other elements or natural forces as an object of his veneration and awe. Thus primitive man was a fire-using, fire-worshipping animal." [1]

The Fire Playing Propensity. — The conquest of fire, the power to understand its significance in the life of man, took centuries to accomplish. To-day, however, the mind and hand of man utilize fire in industries and commerce. Its uses are so complex that the average child has few opportunities to see its

[1] C. E. Brown and G. S. Hall: "Children's Ideas of Fire, Heat, Frost and Cold," *Pedagogical Seminary*, Vol. X, p. 28.

possibilities. Yet although he does not understand the significance of fire in modern industrial life, fire appeals to the child. It is difficult to analyze its charm. Building bonfires, brandishing fire-brands, and setting off firecrackers are pleasurable activities because of the fun of doing something and having things happen as a result. Enjoyment in watching fire seems to be due to æsthetic appreciation of color and form. Such plays of visualization, however, do not belong in the same category with plays involving active experimentation with fire.

Is the Fire-playing Propensity Ingrained in Original Nature? — Of course there are theorists who persist in explaining all natural propensities through recapitulation. To the writer it seems much simpler to account for the child's special interest in fire through pleasure in manipulation and experimentation, allowing for the special attraction of unusual and startling effects. Anyone who has been constantly among children knows that the chief enjoyment of a bonfire is in touching it off and seeing the results; the same may be said of the universal interest in striking matches, shooting off firecrackers, and lighting pin-wheels. In the last three examples, noise and illumination make the results startling and spectacular.

Fire-playing Common to Both Country and City Children. — Country children play more freely with fire than city children, because there are fewer restrictions. In winter, the country child revels in the open fireplace. It is the center of domestic activities. Children gather in the wood, feed the flames, and soon learn to discriminate between woods that burn quickly

and those that do not. Here the family group gather for warmth and comfort, pop corn, sew, talk, and think. When the great logs burn brightly, the shadows become bears and tigers as fancy supplies shape and contour. In summer the brush is piled high in the fields or woods and children's eager hands feed the fire, while their eyes delight in the pictures the leaping flames make against the dark sky. Country children are taught to fear fire because of the disastrous results. Such plays as those mentioned above are invariably neighborhood affairs and are carefully supervised by adults.

The city usually prohibits bonfires except at certain distances from buildings. Yet wherever there are bonfires, children swarm like busy bees, gathering leaves or loose pieces of wood and paper to feed the hungry flames as fast as the fire can devour them. At certain times during the late summer and fall one sees children congregated around such bonfires, laughing, exclaiming, and, unless prevented from so doing, running hither and thither brandishing firebrands. In one neighborhood with which the writer was familiar the boys came often to the houses, collecting papers to burn in sand ovens. Some of these ovens were well constructed with good draughts, showing that the youthful builders had gained considerable knowledge of the principles of combustion and their application to heating apparatus.

Boys Show a Greater Propensity for Fire-playing than Girls. — The Camp-fire Girls' organizations utilize active experimentation with fire as well as emphasizing its symbolic characteristics. The Boy

Scouts' work also gives opportunity for legitimate contact with such elemental forces as fire and water. The boys learn to make fire without matches, to cook over the campfire, and to perform a series of acts which are equally useful and enjoyable.

Much additional light is thrown on children's delight in fire-playing through the following excerpts from a study of "Children's Ideas of Fire, Heat, Frost, and Cold," by C. E. Browne and G. S. Hall.[1] In this study, 148 returns to questions concerning the fire-playing propensity were received, 103 were from boys and 45 from girls. "The average age of the boys was 6.5; of the girls 6.7. From 71 cases noted in the reminiscent returns, as directly observed by the writers, there were 36 boys and 35 girls. Of the boys, 52 per cent played with fire; 47 per cent did not. Of the girls, 34 per cent played, 66 per cent did not." It thus seems apparent that boys are more attracted by fire than are girls, although the interest seems strong with both.

Various Ways of Playing with Fire. — "The delight in fire-playing shows itself most commonly in building bonfires, 24 per cent of all the instances. The next most commonly reported is that of 'swinging around' or rotating about the vertical axis with burning sticks or papers in the hands, 16 per cent. Then, in order, follow: Putting of sticks, straws, and other combustibles into the fire to see them burn, 12 per cent; building fires in houses and other buildings, 8 per cent; setting buildings on fire 7 per cent; setting curtains, bedding, and carpets on fire, 3 per cent; building fires

[1] See *Pedagogical Seminary*, Vol. X, pp. 39-41.

for baking or roasting, also in pans and cans, each 2 per cent, etc. In 14 per cent of these cases among the boys, and 4 per cent among the girls, the building of fires was accompanied by other activities, as running, jumping, whirling the fire around, and yelling. Interesting analogies are found in many fantastic dances and orgies of the North American Indians about their campfires." A consideration of the distribution of interest in the various kinds of fire experimentation mentioned in this study seems to bear out the author's viewpoint that active experimentation, doing something which brings novel and startling results, accounts for the greatest appeal fire makes to children.

Serious Aspects of Fire Play. — The returns also emphasize the serious aspects of fire play. Statistics show that more children are burned to death than perish from any other cause. It is likely that their interest in experimenting with fire grows through periods of unprotected and unsupervised play. The training in caution regarding fire should begin in earliest babyhood and continue throughout adolescence. How many of the cases of destructive fire play cited above are due to carelessness about early habits in connection with fire and how many are due to the intensity of the desire to experiment — a desire so strong that the child seeks in unprotected moments to find out how fire acts, will never be known. In the case of the writer's boy, a chance five minutes alone was utilized to burn matches in the house. "I just wanted to see why ashes from paper are different from those of wood," said this six-year-old child. Extreme punishment and a pro-

gressive educational program seem the only courses for parents to pursue in regard to this dangerous tendency to experiment. The sane Fourth of July movement is doing much to point out the dangers involved by experimentation with fire even where fireworks have been manufactured in accordance with certain statutes. Spontaneous experimentation with fire will be controlled in accordance with the measure of supervision over children's play and with education as to the nature of inflammable materials.

Water as Known through Myths. — Some early peoples believed water to be the origin of all things, and thought all plant and animal life either came from water or was made of water. As Bolton[1] says in substance, through connection with plant life, water was regarded as possessed of life-giving power. People living in countries where there were seasonal droughts ascribed to water the power of a supernatural being. The Egyptians speak of the "spirit of water." Thus, among various peoples, certain streams and lakes were set apart as sacred; rain ceremonials were used for the purpose of securing rain; water was used for healing and purifying purposes; offerings accompanied by religious ceremonies were made to propitiate the "spirit of water" in wells and streams, and holy waters have often been places of oracles and divinations.

Is the Tendency to Play in Water Ingrained in Original Nature? — Several writers believe that a love of water is ingrained in original nature as the

[1] F. E. Bolton: "Hydro Psychoses," *American Journal of Psychology*, Vol. X.

result of man's past history. For example, according to Bolton, as quoted by Thorndike, we find the following theory: "This universal love for water seems not to be due to experience alone, for all babes exhibit it in their earliest days, if conditions are supplied. It seems partly instinctive and of more than recent philogenic (*sic*) origin, and at least suggests a survival of the old-time life in an aquatic medium. This is not demonstrable, but the weight of all testimony is in that direction. How else can we account for the passionate desire of children to paddle, to splash, ride on rafts, run out in the rain; for their intense delight in swimming, even going without meals, walking long distances, enduring severe punishments, etc., just for the sake of being in the water? Many of these characteristics are exhibited by adults when the conventionalities of civilized life can be thrown off." [1]

To this argument Thorndike answers: "It is, in my opinion, probable that the love of paddling, wading, and swimming is wholly or in large measure due to the love of 'doing something and having something happen as a result,' and to the increased freedom of the body when fewer or more comfortable clothes are worn. Water is enjoyed in large measure for the same reasons that a sand pile, a roomful of toys, or a gymnasium is enjoyed." [2]

The writer's observations of thousands of children in spontaneous play with water have led her to accept Thorndike's view that enjoyment of water is in large

[1] E. L. Thorndike, "The Original Nature of Man," *Educational Psychology*, Vol. II, p. 203.

[2] *Ibid.*

measure due to the love of "doing something and having something happen as a result."

How Children of Different Ages Play in Water. — It is interesting to observe the different ways in which children of varying ages respond to water. The child of three is satisfied at first to walk slowly and carefully in the shallow water, enjoying the "feel" of it on his feet. When he has had his fill of this, he begins to splash, laughing and jumping up and down in glee at the exhilaration which comes from this contact with the cool, resisting water. He takes great delight in filling tin buckets with water and emptying them again in the sand; in splashing water with his hands, or in pushing floating boards hither and thither with his hands and feet. But to the child of five or six years, this is tame play indeed. He likes to wade, spash, and jump in the deep water; to run and chase the other children; to throw balls and hoops; to tug at boards and ropes thrown into the water; and to float boats and craft of all kinds. The child of seven or nine years likes to do all this and still more. He wants to do things that appear to be difficult and dangerous; he is constantly daring his fellows to perform some new feat — to jump over ropes, to skip pieces of wood or stones, and to engage in such games as "Water Tag," "Tug of War," and "Find the Coin."

Rural Life Affords Better Opportunity for Water-play than Does Urban Life. — Most children who live in rural communities have daily contact with small lakes, brooks, and creeks; here sand and water present wonderful opportunities for free play and constructive

genius. What fun to walk barefoot along the hard sand at the water's edge; to dig the toes deep into the wet sand; to draw pictures on the sand with a stick; to make deep wells and watch the water flow in and out with the coming and going of the waves; and to

At the Seashore

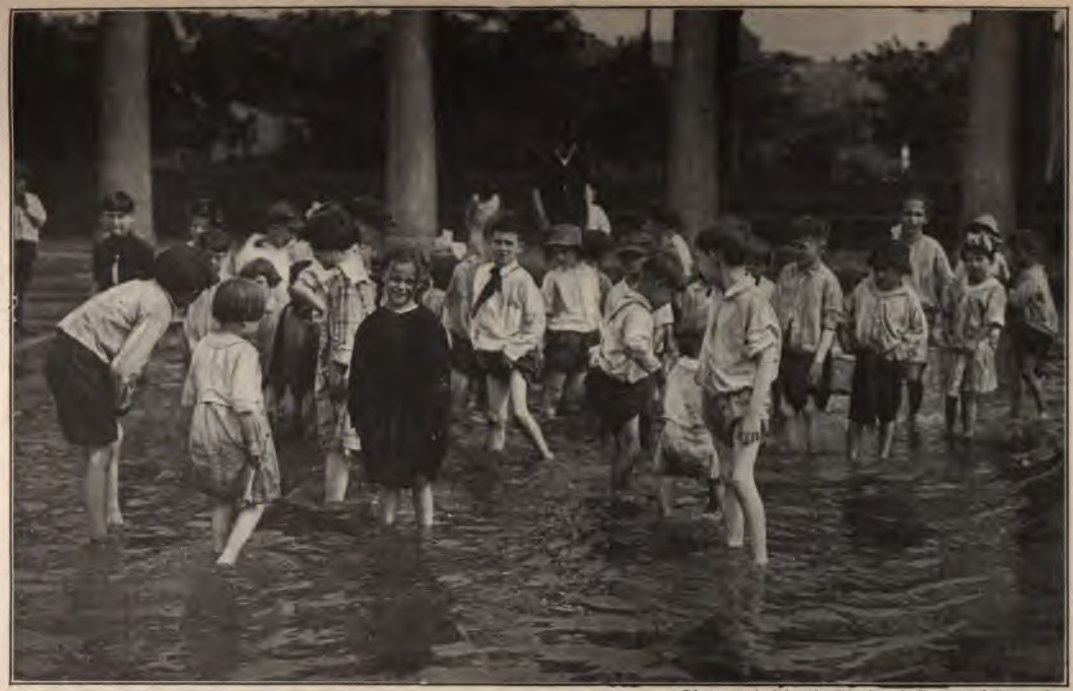
dig deep ditches wide enough for sailboats to ply up and down! Or what joy to play daily in the little brook near home; to ford the narrow places; to build dams and locks; to make water wheels which will turn sand mills round and round; and to whittle boats which will sail majestically along the banks! Add to this the fun of wading on and on indefinitely, without

coming to the end of anything, and the country child's joy of comradeship with water is complete.

The city child, though far removed from streams and brooks, yet comes early into contact with water. Children invariably play with faucets; experimenting

CHILDREN LIKE TO PLAY AT THE WATER'S EDGE

with the falling water, pouring it into and out of kitchen utensils, and producing crude waterfalls and fountains by using a sieve or by holding a hand over the faucet, thus splashing the water about the room. They like to use the garden hose, to sprinkle not only the grass and walks but also pedestrians and passing vehicles; to dart in and under the water; and they shout with glee when permitted to don a bathing suit



Photographed for the Pittsburgh Bureau of Recreation

SPONTANEOUS PLAY IN A WADING POOL

and test the force of the water on the feet, back, and chest.

To the city child the streets and gutters on a rainy day afford great delight. School children splash merrily through puddles and small boys poke with a stick along the curbings and gutters. Wherever there are tubs or pails filled with water children gather about them, for they delight to splash stones in the water, to sail boats, to fill tin cans with water, and, if permitted, to throw water over each other's heads. Most civic agencies for recreation realize the appeal of water play, and provide wading pools, swimming tanks, and shower baths in the recreation parks and playgrounds.

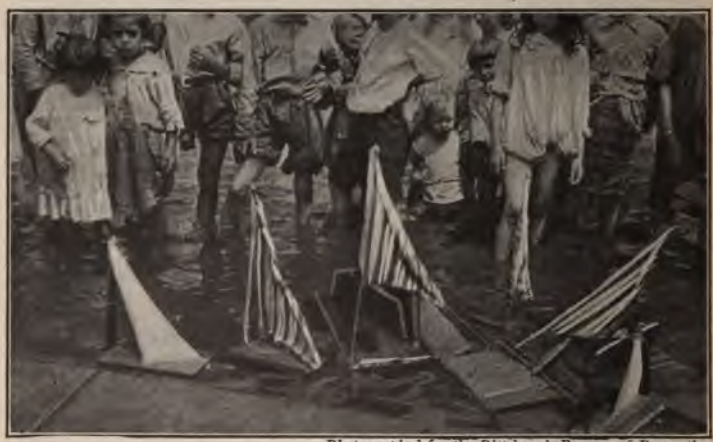
The Wading Pool: Its Construction and Use. — Country children need no wading pools, for in most rural communities sandy or rocky brooks, creeks, or streams entice children back to prehistoric amphibian contact with soil and water. City children of twenty years ago, if not fortunate enough to live near the water, were deprived of much pleasure and profitable experimentation. But to-day most cities have playgrounds, in many of which is a wading pool, that blessed substitute for the pebbly brook and the "old swimming hole." Since most of the wading pools are circular in shape, with a drain in the center from which the water is usually emptied each day, permitting scrubbing of the cement bottom, there is little of the danger of contagion from sources of infection which make stagnant pools a constant menace to health. However, the cold cement is a poor substitute for mud or sand. Half of the enjoyment of

wading comes from putting bare feet down in soft, yielding soil and at the same time reinforcing the exhilaration this contact affords with the stimulating effect of cold water on the skin. Then, too, the crowded cement wading pool gives a sense of physical limitation, for one's movements must necessarily come in conflict with those of dozens of other children who have equal rights to enjoyment. It is also difficult to get the same enjoyment one experiences in roaming along the shores of a lake or aimlessly following the course of a brook. Yet there is the stimulating contact with the cool water. It is hard to explain the emotional contentment that contact with water affords the mind and body. Suffice it to say that some transformation of nerve cells occurs and that there results a physical relaxation, a sense of well-being, which defies analysis.

One advantage, however, inheres in the circular pool fifty or sixty feet in diameter as compared with brooks and creeks. The larger area is shallow and permits even very young children some means of being initiated into the charm of contact with water, while their more venturesome brothers and sisters play contentedly near the center of the pool. Where the pool has no cement bottom, but is made by excavating the soil, and where the water is occasionally filtered away through a drain in order to supply fresh water and allow the rays of the sun to disinfect the sandy bottom, care should be taken that the children's mouths, noses, and eyes do not become exposed to the water, which necessarily contains dust and carries infections. The feet alone are not liable to contagion

except from skin diseases, which are uncommon in early childhood.

Toys and Materials Suitable for Play in Water. — It is not necessary to provide elaborate toys for children to use in the water. Wherever children are found playing in the water, they are observed to be using toys of their own construction. Bits of wood



Photographed for the Pittsburgh Bureau of Recreation

THE PLAYGROUND FLEET

become boats and are pushed about by means of sticks or are guided by the hands of the children themselves. Boards become oars; the children sit down in the shallow water and propel themselves by means of these oars. Cork boats are among the most practicable for playground use; cork reefs and corncob crafts, though more difficult to construct, can easily be made by children from seven to nine years of age. Walnut and egg-shell craft and the tiny peanut-

shell boats furnish children genuine amusement. They are fragile and difficult to handle, and are always capsizing at unexpected times; yet they afford considerable merriment. When children are old enough to handle knives, boats may be whittled out of cigar boxes; a mast, a sail, or cannon can convert these boats into schooners, men-of-war, or super-dreadnaughts.

Fishing plays require only a stick, a line, and a bent pin. The children sometimes cut fish from paper or cardboard, mount a steel hook through the fish, and with a tiny magnet in place of a hook, bait and catch the fish, which, mounted on corks, sail about on the water. These floating fish are infinitely more difficult to catch and require more skill than is demanded to catch the stationary ones supplied in the Magnetic Fish Pond game. Water wheels of various kinds are on the market, but left to himself any ingenious child can invent one and learn through using it the elemental facts concerning water power.

For indoor water play the writer has made successful use of galvanized-iron trays made to fit any table desired and furnished with a drain pipe at one end. The water can thus be emptied easily into pails. This does away with the necessity of emptying the water by hand. Duck ponds are on the market; some of them are mere mechanical inventions by which ducks and swans float around for half an hour or until the mechanism runs down. Celluloid fish, ducks, and swans are attractive materials to add to the galvanized-iron tray mentioned above. They are more durable than the floating toys which children them-

selves invent. Seaplanes, balloons, and other aerial craft enhance the pleasure of play in the water. They can be manipulated by strings while the children wade about, and the seaplanes, at least, can be made to run smoothly over the water. Hoops, balls, and long boards are useful materials to provide for simple plays and games in the water.

Records of Water Plays

1. **Wading Pools. Soho Moultrie Playground.** — Boys banked walls of sand around the inner ledge of the sand box to form a wading pool. They then carried buckets of water from a neighbor's pump and filled the pool with water. They enjoyed splashing in the muddy water with their bare feet. After the fun of this had worn off, they made crude boats out of pieces of wood and pushed these around the pool by means of sticks.

2. **Wading Pool. Junction Hollow Playground.** — The children went occasionally to the Ormsby Park swimming pool and were always planning how they could have one of their own. Every time the supervisor appeared they told her of some new way in which a swimming pool could be built on their playground. As the playground was located in a small valley underneath a railroad bridge, the immediate fulfillment of their hopes did not seem probable. One day, however, they discovered how to make a pool for themselves. A small natural spring was in the location selected for the pool. The children cleaned up the surrounding ground and dug a pit about five feet wide around the spring; this soon filled up with

water and made a small pond in which they could wade. The day after the pool was finished, a mother brought three ducks and let them swim in the pool; this proved a great delight to the children.

3. **"The Old-Fashioned Bucket." Ormsby Park.** — A group of children dug a well; they lined it with blocks molded together with damp sand. It suggested pictures of the "Old-Fashioned Bucket." The children planned a frame similar to the one they had seen in the pictures. To do this they stood two sand shovels upright over the well and suspended a bucket tied by a string to another shovel used as a crosspiece. After filling the well with water the children took turns lowering the bucket and bringing it up full of water. This play lasted several days.

4. **Ponds. Arsenal Park.** — Ponds were made by burying pails in the sand and filling them with water. Turtles, fish, ducks, and frogs were cut out of paper and mounted on milk-bottle tops. The children enjoyed floating these in the water.

5. **Flood. Arsenal Park.** — One day a group of children dug a deep river channel in the sand, filled it with water, and floated boats down the river. They kept pouring in more water until the river overflowed and flooded the banks; then they knocked down the bridges and sank, or rescued, the boats.

A thrilling dramatic play, constructive in purpose yet destructive to material.

6. **New York Harbor. Sullivan Playground.** — Some boys had seen pictures of New York Harbor. They planned to represent it in the sand. They made the bay and harbor, constructing ferry boats,

steamers, and rowboats to put in the harbor; along the banks of the harbor they laid out parks and palisades; out in the bay they added islands, forts, and the Statue of Liberty.

7. **Sailing Boats. Ormsby Park.** — The children tunneled out a river to extend around the four sides of the sand box, filled the river with water, and constructed paper boats to float on it. These boats proving fragile, the children got some large, flat corks, and with thumb tacks attached paper sails. The wind was very strong and blew the boats here and there on the river.

8. **Fishing. Washington Park Playground.** — In the playroom was a large galvanized-iron tray, just the size of the kindergarten table which it was made to fit. It was planned especially for water plays. The children converted this tray into a fishing pond. They made cardboard fish to which steel rings were attached. With an improvised pole and magnet they caught the fish. Sometimes they took the fish home on a string and cooked them for dinner; at other times they were satisfied to catch and land the fish.

9. **Boats and the Carrying Trade. Washington Park.** — During a heavy rain, the outdoor sand pile became flooded with water. After the storm had subsided the boys dug river channels, using blocks for wharves and setting up tall buildings along the river. Next they made boats. One boy put a few sticks in his boat and said he was loading it with lumber. Then all the boys decided to have freight boats carrying different things. They loaded the boats with wood, stone, and sand, going from dock to dock to dispose of

the cargo. Someone suggested having a trading place; so a number of stores were started, some for lumber, some for stone, and others for sand. The girls left their house plays to buy at the stores; some interesting bartering resulted.

This is a splendid example of play where the dramatic goes hand in hand with constructive interest. The accidental suggestion of a lumber cargo started the chain of ideas resulting in the dramatic representation of the carrying trade.

10. **Water Carnival.** — Minerva Stern, in an article entitled "A Water Carnival," published in the January, 1917, number of *The Playground*, describes an interesting carnival held on a wading pool. Each child came bringing his own boat, and, after getting his number, waded around the pool until the judges had made their decision. Then came various races in which the boats were grouped according to weight, size, and character. Finally the winners were lined up for the finals. Another race was run for balance; and it was discovered that many builders had failed to balance their boats carefully.

PART IV

PLAYS INVOLVING MOVEMENT, IMPULSE, AND CURIOSITY

CHAPTER XXIII

Visual Exploration

The Field of This Study Defined. — Having surveyed two divisions of movement play, namely, plays involving gross bodily control and manipulation, we shall now turn our attention to the field of visual exploration, our third division of movement plays. Here we encounter a wealth of playful experimentation connected with brightness, color, form, and perception of movement. Our purpose is to touch upon spontaneous activities which reveal the scope of interest children have along this line and point out a natural procedure or "method" for visual education. The importance of visual education has long been recognized, but its scope is hardly realized at the present time. A magazine called *Visual Education* is devoted to the publication of the results of experimental study in this field.

The Development of the Eye in Childhood. — Any consideration of visual education brings home the important fact that the eye in early childhood is incompletely developed, underfocused, and poorly adapted for close work. But as the body approaches general maturity, the eye tends to become emmetropic. It is safe to say that the eye, like the other sense organs of the normal child, does not change percetibly after the second or third year. How, then, do we account for improvement in perception of bright-

ness, color, form, and movement? It is through the perfecting of new brain associations. For example, a one-year-old child sees a ball as something to mouth, handle, drop, and roll. He also associates some degree of brightness and color with it, but later he perfects all these ideas and associates new ideas with the old ones. Sense training then, so far as the eye is concerned, is a matter of making brain connections.

The Effect of Light, Brightness, and Color on the Human Eye. — The human longing for light is so strong that from time immemorial we have used light as a symbol of divinity, a fact on which we have no time to dwell except to note the significance of the heavenly bodies and of fire in religion.

The infant's face takes on a satisfied expression when turned toward the light. In the second and third months his gaze clings to bright and shining objects. Differences in brightness are perceived at about six months, but color is not usually perceived until the second half of the first year. In the writer's observations of her son she noticed that although his eyes rested with pleasure on colored bows suspended over his crib during the fourth, fifth, and sixth months, yet he gazed with almost equal satisfaction at yellow, blue, and red bows, at candle light, or at a pink afghan. This seems to indicate that degrees of brightness were unperceived by him until about the sixth month.

Most authorities agree that colors are not perceived until the second half year. The consensus of opinion seems to be that most children display more interest in the warm colors, red and yellow, than in the colder

ones. Blue is perceived with greater difficulty than red and yellow, according to most investigators. Preyer says: "The inability of my two-year-old child to recognize blue and gray can be argued not only from his occasional failure to do so, but also from the evident difficulty he encounters in connecting the commonly used and familiar names 'blue' and 'gray' with any special sensations, while 'yellow' and 'red' were correctly applied several months ago. Were the sensations of blue and gray as clear as are red and yellow, there would be no failure to recognize the colors." [1] In the case of the writer's son, at the fifth year gray and cold blues were perceived only in cases where memory associated the name with some article of clothing or a favorite toy. Even the color-blind, as Whipple points out, learn to recognize reds and greens by means of secondary criteria such as brightness and saturation and familiarity with the application of color nomenclature.[2] Hence we cannot be sure that a child recognizes colors at a particular time without testing with a large number of colors of varied degrees of saturation and brightness. Applying this knowledge to this child's apparent lack of perception of blue and gray, we conclude that he either failed to perceive these colors or, perceiving them, found them less attractive than the brighter hues; for whenever he was asked to point out colors in a sunset he invariably failed to mention gray or any blues except the brightest hues of blue.

[1] K. Groos: *The Play of Man*, p. 56.

[2] G. M. Whipple: *Mental and Physical Tests*, p. 150.

The Young-Helmholtz theory assumes that primeval man distinguished only the three primary colors, red, green, and violet. From these were derived orange and yellow, while blue was the very last to be discovered. Primitive tribes paint their bodies and color their ornaments almost exclusively with the warm colors. The cool colors are seldom seen in primitive ornamentation, even in combination with the warm colors. With savages as with children it is safer to assume that the cooler colors are less attractive than that they are imperfectly perceived. Nature uses them profusely and civilized homes are decorated largely in neutral tints.

Sex Differences in Perception of Color. — It is interesting to note that boys concern themselves less with color than do girls. Groos interprets this fact to indicate differences in training rather than in inborn capacity and points to the fact that the history of painting seems to show that the masculine sex has a finer color sense than the feminine.[1] He fails, however, to mention the important parallel that the history of household arts shows that feminine interest in and appreciation of color extends far beyond the masculine. In conclusion, then, it appears that boys and girls have few differences in inborn capacities for color discrimination, but that their attention is directed to different fields.

Perception of Space. — As concerns perception of space, without entering into the controversy as to whether or not children have to learn by practice to respond appropriately to distance, we may safely

[1] K. Groos: *The Play of Man*, pp. 59-60.

conclude that space perception for short distances, aided as it is by the adjustments of the hands and eyes, is earlier and more effectively developed than is color perception, which is dependent upon the eye alone.

Children get their first ideas of form, as they do of space, by using the coöperative results of the hands, the eyes, and the kinæsthetic sensations. The human face, the first oval, is at first to the child a mere patch of light connected with the comfort of being fed. The bottle gives early impressions of cylindrical shape. The ball registers impressions of sphericity to the hands closing in upon it.

Before the results of scientific investigations in perception of color and form were known, the early kindergarten tried to teach form through type shapes, namely, the ball, cube, and cylinder. A child was supposed, somehow, to carry over a knowledge of these three forms to a recognition of form in his environment. For example, he was asked to see cylindrical characteristics in a stove-pipe, a vase, a whistle, or an engine. Procedure of this kind hindered real perception of form. It is more important that a child recognize a stove-pipe as such, than as having cylindrical characteristics. To ask a child to see a cylinder in a stove-pipe is to demand that he eliminate accuracy of proportions from his perception of form and substitute fancy for truth. In psychological terminology it is asking him to reconstruct the image. Children have enough to do to learn to see accurately without being required to juggle their mental images in this fashion.

The Relative Importance of Perception of Form in Visual Education. — Groos makes the interesting statement that the visible form of objects is of higher biological value to the exceedingly important faculty of recognition than is color or brilliancy.[1] Recognition, the first requirement for reproduction, is naturally dependent on perception of form. However true this statement may be concerning the value of form in visual education, it seems more than probable that the early perception of form is indissolubly bound up with that of brightness and of color. Although there are no reliable data gathered from scientifically conducted tests to prove that little children show a preference for colored pictures, from the writer's own experience in showing pictures to children it has appeared that children under three years of age can scarcely recognize the meaning of simple outline. On the contrary, a child of kindergarten age has learned through secondary connections to associate form with simple outline. R came home from kindergarten one day exhibiting a series of crude lines which meant to him trees, soldiers, houses, and flowers. These lines stood for objects only because associations had been built up between lines and objects.

The Natural Way to Learn Form. — Most children learn the fundamental characteristics of form before they go to school. While busy mothers work about the house, busy children finger and manipulate anything which responds to their purposes. And as they handle they learn how form lends itself to

[1] K. Groos: *The Play of Man*, p. 60.

locomotion and to construction. A classification of form from the child's viewpoint would vary at different ages, but would center about the uses of objects. Round pie tins are recognized as better to spin and roll than oval ones; square pans can be built into houses; oblong tins can be used for street cars. Round baskets are seen not as parts of hollow spheres, but as containers. This incidental knowledge of form which the child gets in spontaneous play needs only to be made conscious to afford a basis for more intelligent recognition and appreciation of form in industry, art, and commerce. The mother or teacher needs but to direct the appreciation and classification of form along constantly progressive lines, and teach a suitable terminology. Many mothers unconsciously help their children to distinguish form through spontaneous play with buttons, boxes, jelly glasses, pie tins, and blocks. Playing store, collecting nature specimens, as well as drawing, cutting, clay modeling, sewing, and carpentry work, all teach form in relation to life situations and reveal the characteristics of form in useful ways. The records show many cases where perception of form was perfected through such spontaneous play.

Perception of Movement. — Passive enjoyment of motion is common throughout life. As soon as the eyes develop the power to follow moving objects, children exhibit an unlearned tendency to watch and enjoy motion. The infant follows the movements of people near him; his glance seeks out the undulating movements of flames, the wreaths of curling smoke blown from a pipe, water running from a faucet, or

steam rising from a teakettle. When held at the open window he delights to gaze at falling rain, the whirling snowflakes, and trees and leaves blown by the wind, and to watch the swift movements of automobiles, street cars, and trains. Toys that move are early sought out and the movements of birds, insects, and animals seldom fail to challenge attention.

The writer can remember the delight she experienced in her childhood from watching the movements of the sand and water at the seashore. It was pleasurable to see the beating of the waves on the shore, the dashing of the breakers on the piers, the lapping of the water against the small craft moored in the harbor, and the circling of the sea-gulls over the water. On stormy days it was great fun to watch, from a sheltered place, less fortunate people hurrying to their homes; to follow with the eyes the course of scattering leaves and papers tossed about by the wind; and at rare moments to hear the crash of boughs lashed to the ground by the storm.

Most adults share these interests with children. What a delight to watch the movements of throngs of skaters threading their passage over the ice; to contemplate the merry whirl of dancers skimming lightly over a waxed floor; to watch the undulating movements of swimmers working their passage so gracefully through the water! What pleasure, too, to follow with the glance the swiftly rolling balls sent toward a goal or to watch the progress of tennis balls released from the racket, of arrows speeding upward, or the flight of the swiftly whirling discus! Adults enjoy watching the speeding of automobiles and horses

along race tracks. There is more than the enjoyment of seeing physical skill in watching skillful acrobatics; there is pleasure in contemplating motion in and of itself.

Method in Visual Education. — The records of play activities connected with brightness, color, form, and movement indicate some important considerations for more formal work in visual education and are therefore worthy of mention. In his play the child trains his eye to recognize colors and forms in situations useful to him as he works out purposes of his own. He uses a red glass window for his house of blocks, because he likes the color effect; but when he finds that he cannot see clearly into the interior of the house he is building, he substitutes a white window pane. He soon learns that cylindrical blocks make excellent rollers for toy vehicles; but when he tries to fashion a permanent toy, he discovers that wheels are more easily secured to the toy and serve his purpose better. In construction, the child is not interested in trying out various materials for the sake of mere experimentation; he has some purpose to serve, some end to attain. The old type of sense training was to refine the senses. This seems to be Montessori's position. Her didactic apparatus was calculated to serve the purpose of intellectual gymnastics. She seems little concerned with evidence for or against the transfer of training to situations useful in life. It seems extremely doubtful whether the children taught by her method to discriminate among geometrical forms would recognize those forms in their relation to constructive problems in machinery, sewing, or carpentry work, or whether

their appreciation of art would profit by such exercises. On the contrary, it seems highly probable that a child who learned form through building with blocks, constructing with boxes and paper, and through cutting and drawing would have learned about form in a useful way. The same may be said of training in color. It is *what* the child learns that counts, not how his senses are refined by so doing.

In speaking of the didactic apparatus of Montessori and her method, Kilpatrick has the following to say: "It is true that any experience with color or form or weight helps to make one's concepts of these things; and pleasurable experience along any one of these lines will lead the child to look for further allied experiences. It is further true that growth comes from the organization of such experiences, and that this is the training that we really wish. In these ways exercise with this apparatus may be, indeed, will be, of service; because from it comes opportunity for the conscious consideration of such experiences. The formal and mechanical aspect of the training is, however, practically valueless." [1]

Records of Perceptions of Color and of Brightness

The following records show play situations in which perceptions in brightness, color, form, and movement are gained through spontaneous play:

Twentieth day. "R's eyes followed a moving lighted candle up and down, but not from left to right."

[1] W. H. Kilpatrick: *The Montessori System Examined*, pp. 50-51.

Twenty-third day. "R's eyes followed a candle flame sideways once out of about every three trials."

Twenty-eighth day. "R seemed to enjoy gazing in the direction of the windows and the lighted gas grate. His gaze also seemed to cling repeatedly to a pink afghan thrown over a chair near his crib."

Forty-fourth day. "He gazed at a large mirror with interest."

Seventy-eighth day. "R's gaze rested for several minutes at different times on a red tissue-paper bow suspended by a string from the wall near his crib. Several days later he looked with almost equal interest at yellow, blue, and violet bows."

Fourth month. "Three balls, red, yellow, and blue in color, were placed in a row in front of R. At first it seemed that he gazed less at the yellow ball than at the others, but when the position of the balls was changed several times, it was discovered that he looked more frequently at the extreme left ball, regardless of color."

Seventh month. "One cloudy day I turned on the electric light. R noticed the difference in brightness at once and looked around, then up to the lighted dome. His gaze returned to the dome again and again."

Eighth month. "R likes especially well to see the flames spring out when I touch a match to the gas grate." Mere color and brightness are not the only attraction; fire brings an appeal of its own.

Fourteenth month. "Several rolls of crêpe paper, red, orange, blue, and violet, were placed before R in a row. He seized red first, then orange, then blue.

An hour later the same colors were arranged differently before him. He reached for orange, red, blue, in order named, then held the orange for a considerable period. A third time the rolls of colored paper were laid before him. He crept past the red and blue rolls to reach the orange one."

Fifteenth month. "From red, orange, violet, and blue, R chose orange. From red, orange, violet, and white R chose violet."

Eighteenth month. "The same four rolls of paper were laid on the floor. R picked them up one at a time and threw each down on his other side. He then picked up the orange roll and manipulated it. A few days later R chose red and orange from the four colors. Later in the same day he chose orange and violet. R is apparently at this time partial to orange as a color."

Four years and two months. "R was playing with the buttons in my button box. He said, 'here's a mahogany button. This one is gold.' I nodded approval, saying, 'Find a blue one.' R picked out a dark blue button. 'Yes! that is navy blue,' I said; 'Find a light blue one.' R picked out a bright blue button, either not recognizing the meaning of *light* blue, or not perceiving the color." [1]

Playing with Colored Glass. — The writer spent many happy hours, when a child, playing with samples of bright transparent and translucent glass. In the pure white sand so abundant near the shore, the squares of glass gleamed forth like precious stones.

[1] All these examples are selected from the author's unpublished records.

Glass houses and church windows were built and rebuilt. It was fun also to look through the glass at houses, trees, and people; not only were the color effects interesting, but the objects viewed obliquely through the glass took on variations of form and changed in perspective.

It would be easy to guide such playful experimentation along lines of scientific inquiry in which the cause of refraction and laws controlling it are spontaneously discovered by children.

Treasuring Bits of Cloth. — Children collect pieces of bright silk, velvet, and satin, treasuring them carefully. Most children enjoy the "feel" of silks, satins, and velvets so that color is not the only factor here.

Blowing Soap Bubbles. — Who has not gazed with delight at a group of children blowing soap bubbles in the sunshine and watched their eager faces light up with pleasure when the golden bubbles sail majestically upward, or break into myriads of shining stars before the perilous journey downward is completed? Each bubble acts as a reflector, producing many colors of the rainbow.

Experimenting with a Prism. The Light Bird. — Sooner or later every child discovers for himself bright spots thrown on the wall, floor, or ceiling of a room by the refraction of light through a prism or mirror. "One day when R was a little more than a year old he sat so unusually still for several moments that I looked in the direction of his gaze and discovered he was pleasantly engaged in watching a dancing spot of light on the wall." [1] In Froebelian kindergartens the children call this refracted light

[1] From the author's unpublished records.

"the Light Bird" and often try to catch it, running hither and thither in its quest, only to discover that their eyes alone can catch and hold their pretty plaything.

The Rainbow. — The rainbow invariably calls from children responses of delight. Many children are observed to gaze spellbound by the riotous, sensuous appeal of so many colors. The rainbow is, of course, a common example of reflected and refracted light.

Experimenting with Vegetable Colors Obtained from Roots, Barks, Leaves, and Berries. — The writer has seen children who were playing drug store go to considerable trouble to make colors to represent various "drugs" which they displayed in bottles. With a few suggestions concerning the action of salt, alum, and baking soda as mordants or to produce changes of color, many chemical experiments can be performed by children. The results are pleasing and satisfying. For example, the husks of walnuts or butternuts make brown. Brown can also be made from coffee, tea, or onion. Grape skins and purple cabbage make violet. Pokeberries make a red violet and cranberries a red or old rose. Nasturtium or tomato leaves can be used for green.

Records of Perception of Form

Eleventh month. "R discovered that cylinders roll and learned how to roll them to me by pushing them away from himself."

"While rolling an embroidery hoop, R accidentally learned that a certain method of throwing with a high arm movement induced spinning. He repeated the

act several times. Here were perception of form and enjoyment in contemplating motion voluntarily produced."

"R tried to pick up the spots in the linoleum pattern."

"R fits a small cylindrical box in a larger cylindrical box and says 'gone' when he can not pull it out."

"Whenever R is left free to do what he pleases in the kitchen, he goes directly to the cupboard and takes the lid off the double boiler, then tries to fit it on the various-sized utensils near by. He has never been observed to fit a round lid on a square tin or *vice versa*."

"One interesting feature of R's perception of form in objects is his growth in ability to perceive the uses of objects in relation to their size and shape. He places small dolls in boxes, and has been observed to note variations in the same shape in fitting together such objects as boxes, pans, and jelly glasses."

"R learned to spin an oval tin as well as a round one."

Thirteenth month. "R is pleased to take corks out of bottles and put them back again. Given three glass bottles with stoppers of different sizes, he will devote himself for a considerable period to fitting the stoppers in the right bottles. Here pleasure in manipulation is the chief enjoyment. Mistakes are self-corrective, since only the right stopper will fit each bottle."

"Given a nest of blocks, R did not at first discover how to fit all into a nest. He placed only two together."

"R fits together four stew pans of various sizes, each size in its proper place."

"R attempts to arrange clothespins in a row over the edge of a box. Here some æsthetic appreciation of regularity of form is noticeable."

Fourteenth month. "R appeared to be gazing into a hand mirror which chanced to lie on the floor beside him. Presently he looked again and laughed. I wondered if he was amused at the grotesqueness of the image. He reinforced this belief on my part by holding the mirror perpendicularly and gazing intently into it. In all probability he noticed the reflection of other objects besides himself." [1]

1. **Distorting Mirrors.** — Gazing at images of themselves in the bowls of silver spoons, in glass globes, and in crystals is a favorite occupation of children. Great glee greets the abnormalities of form and features thus produced. Recreation agencies have seized upon this spontaneous interest. Amusement resorts present crystal palaces where the principle of spherical aberration in convex and concave mirrors is worked out for the purpose of getting unusual and startling effects. People become suddenly thin or fat and great merriment results. The interest in spherical mirrors might extend to embrace an understanding of the industrial uses of reflected light, examples of which are searchlights, lighthouses, and the headlights of locomotives.

2. **Double or Triple Mirrors.** — Many children play with double hand mirrors, or gaze into the triple mirrors of dressing-tables. Here the reflecting sur-

[1] From the author's unpublished records.

faces form an angle. The children notice that several images can be seen at once in the triple mirrors; three when the mirrors are at right angles; more when the angles are less than right angles.

3. **Looking at Reflections in the Water.** — Children enjoy bending over wells, ponds, and streams to see the inverted images of themselves reflected in the water. They soon notice that trees and houses at the water's edge appear to be upside down in the water and that poles resting obliquely in the water look broken. They also note that the depth of a pond or stream appears different according to their distance from the water.

4. **Shadow Pictures and Shadowgraphs.** — What child cannot remember the delight of shadow chasing! Many children, too, learn to make shadow pictures on the walls: rabbits, bears, wolves, elephants, and tigers chase each other across the sheet in rapid succession. Half of the interest in shadow pictures comes from passive enjoyment of the movements of the forms created and pleasure in being a cause. Lions can be made to roar and stalk, tigers crouch ready to spring, and kittens dart after their prey. This interest has been commercialized through shadowgraphs. The shadowgraph set consists of punched-out cards on which designs are lithographed in colors. The light shining through produces pictures on the wall.

5. **The Stereoscope.**[1] — This instrument is commonly used in schools and homes. It is an optical device by which two lenses give the appearance of life

[1] See W. B. Forbush: *The Manual of Play*, pp. 327-328.

proportions to objects, persons, and scenery. Add to this the effect of perspective and roundness of contour, and it is readily perceived how children delight in this instrument, also what splendid educational opportunities it has for broadening the scope of such school subjects as geography, history, and botany.

6. **Multiple Pictures.** — When children look into a thick mirror, they notice several images of a near by light or candle. This is because the front surface of the mirror and the metallic surface at the back act as parallel reflectors.

7. **The Kaleidoscope.** — What joy most children derive from looking at the beautiful figures in the kaleidoscope! By looking through a tube containing three mirrors extending its entire length, the children see geometrical patterns of ground pieces of colored glass which are loosely placed between ground glass and a plate of clear glass parallel to it.

8. **The Camera.** — Nearly every child desires to own a camera. The problems involved here are too intricate to be included in this book.

Records of Perceptions of Movements

1. **The Edison Home Kinetoscope.**[1] — Children who are fortunate enough to possess this scientific toy can have motion picture exhibitions in their own homes. Small rolls of films are used and the light is furnished by a small acetylene generator.

2. **The Radiopticon or Postcard Picture Machine.** — By means of this machine, ordinary post cards and pictures can be reflected enlarged upon a sheet.

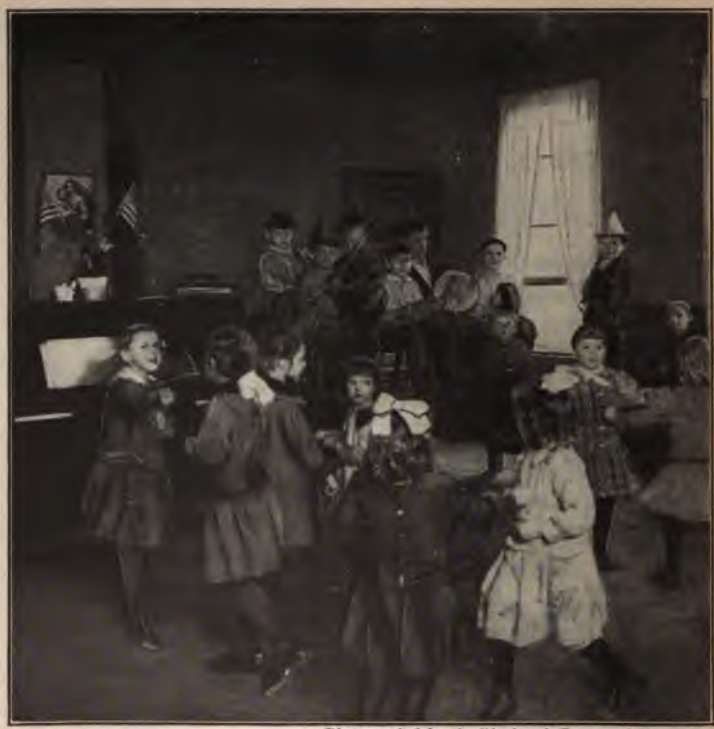
[1] *Ibid.*, pp. 327-8.

CHAPTER XXIV

Experimentation With Sound

The Scope of This Study Defined. — The field connected with experimentation in sound is so vast that it will be possible to touch upon only two or three phases. Babbling and voice play have been purposely omitted while spontaneous experimentation with sounds and noises, also with toys producing acoustic effects, have been selected for emphasis.

Groos' Theory of Sound Play. — In speaking of the tissue hunger for sound on the part of the sensory organism, Groos says: "It seems that, in order to maintain our present life, an incessant rain of outer stimuli must beat upon us, like the atomic storm which many believe pours constantly upon the heavenly bodies and accounts for gravitation. * * * This may be why children are so indefatigable in making noises, patting their hands, cracking their knuckles, snapping and drumming with the fingers, stamping and beating with the feet, dragging sticks about, cracking and slamming doors, beating hollow objects, blowing in keys, banging on trays, clinking glasses, snapping whips, and, in short, delighting in tearing and smashing noises generally. And adults are not much behind them. These same sounds in other forms please us too, as for example the clinking of spurs, snapping a riding whip, rattling sabres, the



Photographed for the Pittsburgh Bureau of Recreation

MUSICAL EXPERIMENTATION

tinkling of tassels and fringes, the rustle of flowing draperies." [1]

Experimentation with Sound. — The child's first experimentation with sound comes through a recognition of the noises and sounds going on about him. Music soothes him in his cradle, toys squeak, birds sing, bells ring, whistles blow, and animals utter

[1] K. Groos: *The Play of Man*, pp. 42-43.

their characteristic sounds, while people talk, whistle and sing. The writer can testify from her own records of one child's natural responses to objects yielding acoustic effects. Before R was a month old he was easily quieted when crying by listening to piano music or the ticking of a watch held near his ear. As soon as he could tear paper the noise produced in this way seemed particularly pleasurable. Ability to grasp and to control his arm movements made the shaking of rattles and pounding and clapping with his hands enjoyable. The noise produced by pounding on the glass doors of the bookcase was so pleasurable that he persisted in this activity even when punished for so doing. He particularly liked pounding with a spoon on tin lids and dishes, rattling dishes about, and pounding wood with a glass bottle; and if not watched he would attempt to pound on marble with a bottle. On his first birthday he was given a drum. He was not satisfied with the noise produced by beating it with a drumstick, but tried other effects by beating the drum softly or loudly with his hands, or by striking it with a bottle, a spoon, or an egg-shaped darning ball. When he heard piano music, he often responded instantly by jumping up and down in his high chair, sometimes also by beating against the chair with his hands and feet. He liked shaking keys, striking a tap bell, and ringing sleigh bells. In fact, he enjoyed making any noises possible to make by hitting and pounding. At thirteen months he sometimes struck a note softly on the piano, although then, as earlier, pounding on the piano loudly with both hands was his chief delight.

About the same time he discovered that by inserting one end of a steel strip between the rails of his play pen he could vibrate it and produce a buzzing sound. This was one of his favorite plays for several weeks.

The Physiological Foundations of Appreciation of Sound. — All this stimulation and appreciation of its meaning is an important part of education in infancy and childhood. The impression of each sound is transmitted by the proper nerve to the brain and is there recognized. And so, in children's early babbling, certain chance variations in sound are more pleasing than others and are noticed by eager parents who encourage their children to reproduce them. Thus they are perceived and felt more vividly and are developed for use in connection with the speaking or singing voice. Such a conscious and willed reproduction of sound represents real achievement in the development of the mind-ear. There is in the mind an image of these sounds and this image persists and motivates the reproduction of the sound on a certain pitch, and with a certain intensity, duration, and stress. To reproduce these tone effects accurately the whole vocal apparatus — the lungs, the muscles surrounding them, the vocal cords, tongue, palate, and maxillary muscles — must be set in motion. The mind-ear also judges the result and the child repeats a tone or sound until desired effects are gained, or until satisfied by the activity itself.

Development of Apprehension of Music.—The mere recognition of isolated musical sounds or of noises does not necessarily lead to musical appreciation. So long as this tone is unrelated to other tones in the

mind we have not musical thought. It is only when a series of musical sounds is grouped in rhythmical units and these groups of sound are harmoniously perceived that musical thought may be said to exist. The faculty of hearing, of listening, so as to make sense of what is heard requires steady and systematic cultivation during the same years that the eye is being trained in countless ways to see and perceive accurately. It is a commonplace to suggest that the ear requires training during its period of greatest sensitivity. It is prior to the fourteenth year that the child's nervous system is the most responsive to sound and rhythm.

Musical Appreciation. — It will be impossible to more than refer to the wide, new experimentation having for its object musical appreciation as distinct from performance. A number of phonograph companies are conducting experiments in connection with records, trying out different systems in practice centers. The following range of experimentation is perhaps typical of the new lines of development. The author says:

The following ways for arousing curiosity and directing interest have proved very successful in the experiments:

(1) By selecting a poem or story that is believed to be in a mood parallel to the music; thus stimulating the curiosity of the listeners to hear how nearly the literary mood suggests the music mood.

(2) By directing the attention of the listeners to music through their knowledge of marching, dancing, e

(3) By suggesting that the music may be used in pantomime or interpretative dancing.

(4) By suggesting that the music is in the same mood as a picture, either shown or described.

(5) By presenting a problem, for instance: two poetic selections with one musical selection. After studying the mood in each selection, play the record and have the listeners decide which they think the music fits the better; or by reversing the process and using two selections of music with one poetic selection.[1]

Acoustic Playthings. — Children, like savages, show extraordinary cleverness in fashioning crude musical implements. With savages the impulse to make musical instruments arises largely from their desire to accentuate dance-rhythms, and incidentally to add new methods of experimentation in imitating the sounds suggested by nature or by voice play. With children, pleasure in manipulating materials in such a way that musical sounds are produced is sufficient to account for the large numbers of ingeniously fashioned clappers, whistles, drums, and stringed instruments we find among children's original toys.

Musical Toys to be Struck or Shaken. — This group of toys may correspond to such musical instruments as the drum, the gong, the tom-tom, the triangle, bells, the hammer, the tuberphone, and the tambourine. The child invents his own rattles by filling boxes with stones, gravel, or sand. Jingles are made of bunches of pebbles or bones. Clappers of wood or bone are frequently made and castanets are made of shell and metal. Drums are invented by stretching a piece of cloth or leather over gourds, a hollowed piece of wood, or a metal dish. These drums are struck either by the hands or by sticks. Gongs are made from stone or wood and are sometimes arranged in sets to produce contrasting sounds.

[1] L. Mohler: "Music Moods," *Educational Bulletin*, Columbia Graphophone Company.

Many children learn to play crude tunes on pans or glass goblets filled with water. They soon discover how to produce varying sounds by altering the amount of water in the goblets or the nature of the stick they use for striking.

Toy Stringed and Wind Instruments.— Spontaneous plays with so-called wind instruments are almost as numerous as with beaten ones. Children blow on grasses or willow whistles, thus producing shrill and startling sounds. Playing tunes on combs is a favorite pastime. Experimentation with a tin horn or roll of paper often leads the youthful inventor to produce a megaphone; if he lives on a ranch, natural horns are converted into trumpets. It is but a step to the invention of the traditional "Pipe of Pan," made of reeds, grasses, wood, or stone, and with no hole to finger or reed to set in vibration. Most children stop at this point, although a few go so far as to learn that the principle of producing sound through a pipe is to set the air within into vibration by allowing a stream of air from the mouth to strike the edge of the pipe, or by using a vibrating tongue or reed. The children who have constructed crude wind instruments are quick to grasp the principles of sound-making illustrated by the flute, the clarinet, and the trombone.

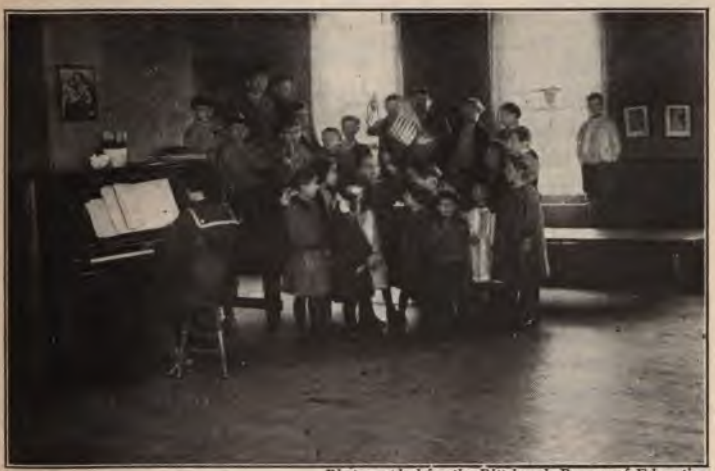
An introduction to stringed instruments often comes through playful experimenting. Boys who work with metal discover that they can produce musical sounds from thin strips of metal fastened securely in a vise. Drawing a bow across a partly filled glass of water also produces pleasant tones. Someone has said

that thrumming with the hand on a bowstring may first have suggested musical sound to the ears of the caveman. The child gets his introduction to the harp type oftenest by stretching cord tightly over a shallow wooden box. He varies this by adding a series of catgut strings of different length or mass and plucking them with a piece of wood, metal, or ivory. The number of strings varies from one or two upward, though the weakness of the framework usually limits both number and tension. Many boys entertain themselves for hours by plucking the strings of a home-made banjo or guitar. They soon learn that even in the simplest of these stringed instruments the air within the box acts as a resonator. For the same reason a teacup or a sea shell held to the ear emits sounds which seem to the ear to resemble the roar of the sea.

Echo Plays. — Echo plays may well be included under acoustic effects spontaneously produced by children even though the agency is the human voice. Most children can remember the pleasure derived from shouting loudly near steep hills, tall piles of lumber, or high buildings, and hearing the sound come back again. Children who travel notice the strange and unusual echoes which occur between the parallel walls of deep canyons. Boys out hunting experience aerial echoes when they hear the sound of a gun gradually rolling off in the distance. At amusement parks there are whispering galleries into which children are often taken. When they whisper softly on one side the sound may be heard distinctly at some distant point because of the curved walls.

The Toy Orchestra. — So many of the results of experimentation with children's toy orchestras have been published in educational magazines and musical journals that it seems unnecessary to explore the possibilities of the toy orchestra in this study of spontaneous sound play.

The writer includes a selected list of descriptions of various experiments in connection with the many-sided efforts to give children musical appreciation.



Photographed for the Pittsburgh Bureau of Education

"AMERICA," ACCOMPANIED BY PLAYGROUND ORCHESTRA

A Selected List of Readings concerning Toy Orchestras and Training Children in Musical Interpretation

J. N. Barrett: "Music During the Third Year," *The Home Kindergarten Manual*, pp. 155-157. (This article touches on early training in the perception of musical sounds in the home, and gives suggestions for using music to help control emotions and moods.)

C. B. Cady: "Music Needs of the Kindergarten," *Ibid.*, pp. 305-308. (Discusses the value of music for music's sake, not for a program.)

C. B. Cady: "Music Education of a Little Child," *Kindergarten and First Grade*, 1916-1917.

C. Crawford and E. R Fogg: *The Rhythms of Childhood.* (Selected rhythmic activities with simple music to express really childish ideas and words.)

C. H. Farnsworth: *How to Study Music.*

M. H. Glyn: *Rhythmic Conception of Music.*

E. Jaques-Dalcroze: *Rhythm, Music and Education.*

F. Kirk: *Rhythmic Games and Dances for Children.*

I. C. Knapp: "Musical Activities with Little Children," *Kindergarten and First Grade*, June, 1918. (Suggestions concerning rhythmic activities, bands, and creative singing.)

S. Macpherson: *The Musical Education of the Child.* (Discusses the child's musical environment and how to help him interpret it.)

S. Macpherson: *The Musical Education of the Child.* Part II, "Appreciative Music Study: Its Meaning and Its Value."

S. Macpherson: *The Appreciative Aspect of Music*, chap. ii, "How to Listen to Music."

G. Mayard: "The Music Problem," *Ibid.*, March and May, 1920. (Discusses appreciation of music through the phonograph and suggests a few records to be used with small children.)

G. Mayard: "The Music Problem," *Ibid.*, February, 1920. (A discussion of musical toys and the kindergarten orchestra.)

G. MAYARD: "The Music Problem," *Ibid.*, January, 1920. (Suggestions for listening to elementary music sounds.)

D. C. MILLER: *The Science of Musical Sounds.*

J. B. MCEWEN: *Thought in Music.*

L. MOHLER: *Music Moods as a Basis for Appreciation.* Education Bulletin, Columbia Graphophone Company.

M. E. PENNELL: "Music for the Early Years," *The Home Kindergarten Manual*, pp. 308-319. (Contains descriptive lists of songs, instrumental selections, and phonograph records, also methods for using each.)

W. S. PRATT: *The History of Music*, chap. i, "Primitive or Savage Music."

H. H. SEYMOUR: *What Music Can Do for You.* (Has a chapter on music for children.)

E. SMITH: "Early Music Teaching in School," *The Home Kindergarten Manual*, pp. 544-545. (Discusses the preparation and study of a song and the nature of an ideal song for children.)

C. F. SMITH: *The Music of Life.*

W. R. SPALDING: *Music, an Art and a Language.*

T. SURETTE: "Music and Life," *Atlantic Monthly*, Vol. 119, pp. 373-380.

T. SURETTE: "Public School Music," *Ibid.*, Vol. 118, pp. 812-823.

T. SURETTE: "What Is Music?" *Ibid.*, Vol. 117, pp. 188-197.

T. SURETTE: "Music for Children," *Ibid.*, Vol. 117, pp. 356-363.

E. B. TAYLOR: *Anthropology*, chap. iv, "Language." (Discusses gesture-language.)

H. WEBER: *Putting Young America in Tune.* (How to teach children appreciation of music.)

G. H. WOODS: *School Orchestras and Bands.*

APPENDIX A

TOPICAL REFERENCES AND EXERCISES FOR TEXTBOOK ASSIGNMENT

CHAPTER II

PLAY AND WORK: AN INTERPRETATION

Collateral Reading

G. D. STRAYER and N. NORSWORTHY: *How to Teach*, chapter iv, The Meaning of Play in Education.

C. E. SEASHORE: *Psychology in Daily Life*, chapter i, Play.

K. GROOS: *The Play of Man*, pp. 361-389. (Discusses the theories of play.)

J. DEWEY: *How We Think*, pp. 161-169. (Discusses play and work.)

F. BOBBITT: *The Curriculum*, chapter i, Educational Experience upon the Play Level; chapter ii, Educational Experience upon the Work Level.

J. L. MERIAM: *Child Life and the Curriculum*, chapter xiv, School Studies—Play.

F. N. FREEMAN: *How Children Learn*, chapter v, The Child's Native Responses — Play.

G. T. W. PATRICK: *Psychology of Relaxation*, chapter ii, The Psychology of Play.

L. E. APPLETON: *A Comparative Study of the Play Activities of Adult Savages and Civilized Children*, pp. 78-83.

C. W. WADDLE: *An Introduction to Child Psychology*, chapter v, The Play of Children.

Questions and Exercises

1. What is the "surplus energy" theory of play; the "utility" theory; the "atavistic" theory; the "biological" theory?

2. What were your favorite plays in childhood? Which do you connect with inherited tastes and capacities? Which were directed or stimulated by environment or imitation?

3. Were there any plays common to childhood which you cannot include in your repertoire of plays? Account for the omission.

4. Describe several play activities which involve either work or drudgery. What conditions, both physiological and psychological, produce changes in the development of purposeful play?

5. Give several illustrations of how play may pass insensibly into work.

6. Discriminate between supervised and spontaneous play as regards purpose, motivation, and habit formation.

7. Make a list of play projects which would be likely to permit to children choosing them, a variety of purposes sufficiently strong to help initiate the means and technique necessary in the achievement of the projects. Separate those projects primarily suited for the kindergarten from those suited for the first, second, third, and fourth grades, respectively.

8. What standards would you apply in judging whether or not a given play activity is of value to an individual child or to a group?

9. How far are you willing to go in demanding that individual children reach set goals of muscular coördination in such physical activities as rolling a hoop, batting a ball, or in swimming and in dancing?

10. How would you measure the development of character in play or in work?

11. Do you account for play through a single instinct or through special instincts connected with life in general? Illustrate your point by applying it to movement plays and to dramatic plays.

12. Discriminate among play, work, toil, drudgery, recreation, and amusement in childhood and in adult life.

13. Discuss the values of supervision of children's play. What are the advantages and disadvantages in regard to (1) securing the expression and repression of desirable and undesirable inborn tendencies; (2) adapting plays and games to children's stages of development; (3) adjusting individual differences to group needs; (4) emphasizing the intellectual, social, moral, and physical elements

of the play at the proper time; (5) preserving the initiative of children? Give four examples to show common errors in supervision, including in your diagnosis of mistakes the points mentioned.

CHAPTER III

EDUCATION THROUGH DRAMATIC PLAYS

Collateral Reading

K. GROOS: *The Play of Man*, pp. 300-313. (Discusses dramatic imitation in play.)

I. KING: *The Psychology of Child Development*, chapter x. (Deals with the meaning of imitation in childhood.)

N. NORSWORTHY and M. T. WHITLEY: *The Psychology of Childhood*, chapter ix. (Discusses imagination in childhood.)

E. W. CURTIS: *The Dramatic Instinct in Education*, chapter vii, Play.

W. MCDOUGALL: *An Introduction to Social Psychology*, chapter xv, Imitation, Play and Habit.

Questions and Exercises

1. Visit a playground. Remain for one hour an observer of a group of children from three to seven years old. List their activities. Do the same with a group of children from seven to nine years old, and with another group from nine to twelve years old. Compare with others' lists. What proportion of plays are dramatic? What proportion are *dominantly* plays involving physical activities and skills? What proportion involve impulse and curiosity about natural forces and materials?

2. In the dramatic plays what instincts and capacities did you notice? Did you see examples of mastering or submissive behavior, or motherliness, or the hunting and fighting instincts? Of display, or self-conscious behavior? Of sex behavior? Of gregariousness? Of nurturing? Of protective behavior? Of acquisition and possession?

3. What characteristics of people and what features of inanimate objects did you see imitated most frequently? At what ages?

4. Where did you notice "make believe" and how would you characterize the mental attitude back of such play?

5. Observe several dramatic plays and note whether the social tendencies such as gregariousness, desire for approval, dislike or scorn, kindliness, attention to human beings, and the like, are being developed normally or the tendencies opposed to them, fighting, mastery, rivalry, jealousy and ownership. What seem to you to be the most popular dramatic plays from three to seven years; from seven to nine; from nine to twelve years?

6. What laws of attention account for the short duration of the dramatic plays of children of kindergarten age, and for the wide range of interests displayed all through childhood?

7. Give some definite, practical illustrations of how dramatic plays supplement training in observation, attention, imagination, coöperation, and language development.

8. Present two dramatic plays. Show the possible influence of other persons in (1) what the children did; (2) their manner of doing it; (3) the motives which induced the dramatizations. Indicate also the native tendencies which led to the plays.

9. Sum up your ideas regarding the advantages and disadvantages of emotional training through dramatic play as contrasted with training through actual life activities.

10. Illustrate how season, sex, and custom influence children in their choices of plays and games.

11. From an analysis of plays involving imitation, show how the tendency to duplicate the actions and attitudes of people is one means of conserving social progress; indicate also how the imitative tendency hinders progress.

12. Do you regard dramatic play as a preparation for life or as a method of living? Support your answer.

13. Show how undesirable instinctive tendencies may be modified through dramatic plays.

CHAPTER IV

Playing Doll and House

Collateral Reading

G. S. Hall and A. C. Ellis: *Aspects of Child Life and Education*, A Study of Dolls, pp. 157-204.

M. V. O'SHEA: *Social Development and Education*, chapter ix. (Discusses social types, including the dramatic.)

L. A. PALMER: *Play Life in the First Eight Years*, pp. 199-205. (Relates how children may be taught to assume some household responsibilities in the play spirit.)

E. V. DOBBS: *Primary Handwork*, chapter v, The House Problem.

M. E. WELLS: *A Project Curriculum*, Section 1 B, First Grade, Major Project—Playing Families.

C. F. CHASSEL and M. S. UPTON: "Scales for Measuring Habits of Good Citizenship." Teachers College Record, Volume XXIII, pp. 52-80.

Questions and Exercises

1. From your observation of children's house-plays, list all the instinctive tendencies you think enter into such play. State how undesirable tendencies may be modified by associating with them unpleasant consequences, and how desirable tendencies may be strengthened by rewards.

2. List in order of their importance, in connection with house-plays, the social and non-social tendencies given in Thorndike's "Original Nature of Man," *Educational Psychology*, Volume I.

3. Can children in playing house gain specific skills in making beds, laundering, and the like? Is it more or less economical to develop household skills in play than in connection with responsibilities in the home? What part would frequency and intensity of interest play in fixing these habits?

4. From a perusal of the records of children's spontaneous house-plays indicate how you could improve some of the plays by stressing real-life situations in place of some of the symbolic and representative plays described.

5. What is the bearing of the child's disposition to pet and fondle dolls, pets, and other children upon his attitudes as regards consideration of others, kindliness, and protection of the weak?

6. If a child of your acquaintance were satisfied continually to engage in such dramatic play as Record 2 in this chapter represents, upon what level of intelligence would you place him?

7. Analyze the relative intelligence of both girls in Record 3, making allowance for physiological age, and the fact that one child

was in a new environment. Which social traits should be encouraged in each child? Which ones penalized?

8. Mention some differences in the natures of children which are like the differences between primitive and civilized people and which you consider are the result of variations in intelligence.

9. Show how the play described in Record 6 could be made more educational by substituting real experiences for the artificial ones described.

10. Do you consider that promptness, neatness, orderliness, and the like can be learned in connection with dramatic plays such as Record 8 represents? Support your answers by illustrations.

11. Show how ideas of justice originate in real life situations. Criticize Record 10 from this standpoint.

12. After reading Record 11, indicate how character development could result from demanding control, courtesy, politeness, and the like in connection with the play. Would you be able to demand from the children the qualities necessary to enact a rôle; for the cooks, neatness; for the ticket puncher, skill in making change; for the waitresses, politeness and quick service?

13. If you grant that character development is one of the purposes of supervised play, how would you seek to motivate children to demand right responses from each other? Are you willing to reward achievements in character as you reward skill in running, jumping, and throwing?

14. Could portions of the Chassell-Upton scale of measuring habits of good citizenship be used in connection with dramatic plays on the playground and in the home? Indicate how.

CHAPTER V

Playing Store

Collateral Reading

J. and E. Dewey: *Schools of Tomorrow*, pp. 45-48. (Discusses the use of games involving store activities in connection with school instruction.)

M. E. Wells: *A Project Curriculum*, Section 1 B, Second Grade, Major Project—Playing Store.

C. F. BURK: "The Collecting Instinct," *Pedagogical Seminary*, Volume VII, pp. 179-207.

J. B. WATSON: *Psychology From the Standpoint of a Behaviorist*, pp. 255-256. (Discusses collecting and hoarding.)

F. G. BONSER: *The Elementary School Curriculum*, chapter v. (Shows the emergence of the curriculum from life activities.)

Questions and Exercises

1. Which type of store experiences do you consider most important, real play with real materials, representative play, or actual buying and selling in commercial stores?

2. In connection with buying and selling in real stores, how can you develop in children the ability (1) to concentrate on purchasing one or several articles and on getting the correct change; (2) to search and find a quality desired; (3) to test the quality by the end it is to serve and the price paid for it?

3. In playing store with real materials how can you demand the following social habits: neatness and beauty in the store; promptness in attending to orders; accuracy in filling orders; patience and courtesy in store behavior; coöperation in planning and executing the work?

4. Are you willing to reward children for achievements in character in connection with store-plays? If so, how?

5. List the arithmetical skills which are likely to be needed in storekeeping. Make separate lists for the kindergarten, first, second, third, and fourth grades.

6. Show how writing and reading grow out of a felt need in connection with store-plays.

7. Indicate how appreciation of color and form is an integral part of experience in playing store.

8. What goals or standards of achievement are you willing to demand from children who wish to play storekeeper, buyer, deliveryman, and bookkeeper in store-plays?

9. Show the correlation between store-plays and the work in manual training, in fine and industrial arts, in cookery, physics, and chemistry.

10. How can habits of thrift be established through playing store?

11. Indicate how interest in collecting and hoarding can be connected with store-plays.

12. Make a list of problems or projects which might arise from school excursions to stores.

13. Do you approve of the toy shop model store equipment? Support your answer.

14. List an equipment necessary for playing store in any given grade. Plan for (1) grocery store; (2) millinery shop; (3) drug store.

15. Relate the dangers and limitations of overemphasizing representative plays with symbolic materials in regard to (1) habit formation; (2) economy of time.

CHAPTER VI

PLAYING SCHOOL

Collateral Reading

E. L. THORNDIKE: "The Original Nature of Man," *Educational Psychology*, Volume 1, pp. 92-97. (Discusses some of the social instincts — masterly and submissive behavior and display.)

E. A. KIRKPATRICK: *Fundamentals of Child Study*, chapter v. Imitating and Socializing Stage.

J. E. LEE: *Play in Education*, chapter xviii. Subjects of Personation.

Questions and Exercises

1. What proportion of plays in which social limitation is important are found in the plays of children from seven to ten years of age?

2. What other plays besides school are important as a means of social imitation?

3. From the records do you consider that the methods of teaching drawing, writing, or gymnastics carry over into children's play as habits?

4. Of what significance does the lesson in physical training described in Record 1 bear to the problem of formal *versus* informal play?

5. Do you consider that children to whom school represents real experiences in carpentering, gymnasium work, music, drawing, and the like would represent school in the way described in Record 1?

6. Mention the social characteristics most likely to be imitated in playing school. Explain why.

CHAPTER VII

HUNTING PLAYS

Collateral Reading

J. F. LEE: *Play in Education*, chapter xxix, The Gang.

N. NORSWORTHY and M. T. WHITLEY: *The Psychology of Childhood*, chapter iii. (Discusses the non-social instincts.)

H. D. SHELDON: "The Institutional Activities of American Children," *American Journal of Psychology*, Volume IX, pp. 425-448.

L. H. GULICK: *A Philosophy of Play*, chapter iii, Hunting and Fighting.

Questions and Exercises

1. Is there such a thing as a general hunting instinct? If so, what is it? If not, what are the situations and responses referred to?

2. Give some definite, practical illustrations of how pursuit and flight may be utilitarian responses to savage children and playful activities to civilized children.

3. How can we preserve the individualistic tendencies, rivalry, fighting, and competition, yet develop sympathy and coöperation? Illustrate your point by indicating ten hunting plays for children under ten years of age, which involve team play in opposing gangs, yet provide for coöperation and fair play.

4. What are the dangers and advantages connected with school teams or contests between school teams, also with debating societies?

5. Make a list of games involving progression in the use of the hunting responses.

6. List ten quiet games involving the search for hidden objects. State at what ages these games can suitably be played.

7. Criticize the following utilization of the hunting responses as a center for correlating the various activities of the third grade: During one month the children made bows and arrows and hunting costumes, constructed Indian wigwams, solved arithmetic problems relating to the trade and barter of Indians, dramatized the hunt, read Indian folk-lore, sang Indian songs, played Indian games, molded and baked Indian pottery, learned Indian dances, relived other phases of the Indian life.

8. What tendencies lie back of bullying and teasing, hounding those of religious faith other than our own, college hazing, and persecution of special classes in society?

9. Plan five spontaneous hunting activities, participation in which trains children to value law, order, and equality of opportunity.

CHAPTER VIII

Fighting Plays

Collateral Reading

E. L. Thorndike: "The Original Nature of Man," *Educational Psychology*, Volume I, pp. 68-76. (Discusses fighting.)

J. A. Puffer: *The Boy and His Gang*, chapter x, The Individualistic Activities and the Group Games.

G. E. Johnson: "Play as a Moral Equivalent of War," *The Playground*, Volume VI, pp. 111-123.

J. E. Lee: *Play in Education*, chapter xxv, The Fighting Instinct.

Questions and Exercises

1. Give illustrations from your own experience or from children's literature of a child's natural responses to the first five situations enumerated by Thorndike in the collateral reading.

(a) Being interfered with in any bodily movements which the individual is impelled by its own constitution to make.

(b) To a similar situation, except that interference is by getting in the way or shoving.

(c) To the situation "being seized, slapped, chased, or bitten."

(d) To the situation "sudden pain."

(e) To the situation "an animal of the same species toward whom one has not taken the attitude of submission and who does not take it toward him."

2. Read all the records in this chapter. Discriminate between the cases where fighting seems to be called out by uncontrolled brute force occasioned by low intelligence and the cases where fighting results from the desire of physical prowess, strategy, skill, and daring.

3. On what level of intelligence do you place the sentinel in Record 1? What social habits and attitudes would you strive to develop in this child? Do you approve or disapprove of the play leader's policy of non-interference?

4. Indicate how the type of fighting play seen in Record 3 could be improved (1) as regards rules of fair play; (2) as regards type of experience dramatized. On what level of intelligence would you consider children who persisted in plays of this kind?

5. How would you proceed to build up a stock of ideas which should control the combative tendency and develop coöperation, sympathy, and fair play in children? How eliminate the individualistic responses? Support your answer by several illustrations. Indicate how this method would apply to the two boys in Record 5.

6. What experience do you consider should precede the need for the following rules: (1) boys never fight girls; (2) one never fights a smaller or a weaker playmate; (3) one never fights a child wearing glasses?

7. What treatment or changes in environment might avoid the following pugnacious behavior:

(a) Where a boy or girl falls into fights coming home from school.

(b) Where children continually quarrel for advantage in plays and games.

(c) Where an infant whose will is crossed continually hits and strikes at his parents.

(d) Where children give way to outbursts of temper or to combating authority through "answering back."

8. Submit a plan for the education of the combative tendency in girls in the lower primary grades; in the upper primary grades.

9. Submit a plan for boys in the lower primary grades; in the upper primary grades.

10. Suggest ways in which the activities of undesirable gangs may be motivated, controlled, and directed toward social ends.

11. Granted that the pugnacity of nations resulting in warfare is being supplanted by emulation in industrial and commercial spheres, what possible consequences can you foresee in the moral fibre of individuals and of society?

CHAPTER IX

Playing Hospital and Funeral

Collateral Reading

A. B. Gomme: *Dictionary of British Folk-Lore*, Volumes I and II. (Read a description of funeral games — Booman, Green Grass, Green Gravel, Jenny Jones, Old Roger, Wallflowers.)

A. B. Gomme: *Ibid.*, Volume II, pp. 527-531. (Discusses the content of this type of games.)

Questions and Exercises

1. How do you account for the fact that savages represent their joys and sorrows through movement? Look through several folk-dance books for samples of pantomimic dances illustrating this fact.

2. What types of movement do children use to indicate pleasure, joy, and expectation? Select several folk dances which could be used to express such moods. Supply children with a happy experience and let them interpret their feelings through a pantomimic dance; record results.

3. What types of movement do children spontaneously use when disappointed, dejected, and unhappy? Will they pantomime their sorrows as they do their joys and pleasures? Give illustrations.

4. Do children realize the meaning and significance of the traditional funeral games? Support your view with fact.

5. Look through the records of hospital plays for examples of the exercise of the social instincts — motherly behavior, kindliness, sympathy, and desire for approval and display.

6. Analyze Record 1 from the standpoint of instincts. List in order of importance the original tendencies which made this play appeal to the children. How far could you depend upon spontaneous imitation to motivate drill in connection with habits of cleanliness and kindliness and with the care of the sick?

7. After reading Record 3 explain psychologically the elements which made this play attractive to the one enacting the chief rôle and to those playing minor rôles.

8. Read Record 4 and indicate whether the ignorance of these children concerning hygiene is due to low intelligence or poor environment. Could knowledge concerning hygiene be taught through play?

9. What is the attitude of children under six years of age toward the death and burial of pets? Toward the funerals of grown-ups?

CHAPTER X

PLAYING FIREMAN

Collateral Reading

G. SISSON: *Studies in Education*, edited by Earl Barnes, First Series, Stanford University, 1896-97. Children's Plays. (Presents a study of spontaneous play among kindergarten children.)

L. A. PALMER: *Play Life in the First Eight Years*, pp. 167-173.

L. H. GULICK: *A Philosophy of Play*, chapter v, Fire Play.

Questions and Exercises

1. Compare the repertoire of play in the group observed by Miss Sisson with the repertoire used in kindergartens (1) as to movement; (2) as to quality of imitative-dramatic action; (3) as to variety of dramatization. In the spontaneous plays was the children's attention centered upon action or the effects of action? Control of ideas, or free outpouring of images? Choice of means to reach ends, or imitation of some leader's copy?

2. After studying the records presented in this chapter, name the values which you consider children gain from freely constructing plays of the type this chapter suggests.

3. Indicate how playing firemen, trainmen, and policemen and similar dramatizations may become for children a means of participation in real life activities in real situations.

4. Indicate in what ways a supervisor could inculcate in children through dramatic plays (1) a stock of ideas regarding protection from fire; (2) habits of quick action in the presence of fire; (3) courage, bravery, and protection of the weak and helpless.

5. Criticize the toys commonly sold to represent children's ideas of firemen and policemen. Plan three toys you consider of possible educational value in connection with playing fireman.

6. Name five stories which you consider to have unusual educational value for children; confine your list to stories which would lead to dramatizations of fire.

CHAPTER XI

PLAYING ANIMALS

Collateral Reading

A. M. KRACKOWIZER: *Projects in the Primary Grades*, pp. 120-154. (Gives suggestive outlines for nature study from a functional viewpoint.)

N. NORSWORTHY and M. T. WHITLEY: *The Psychology of Childhood*, pp. 60-63. (Discusses kindliness, sympathy, and cruelty.)

J. and E. DEWEY: *Schools of Tomorrow*, pp. 89-102. (Tells what progressive schools are doing in providing for contact of animals.)

S. BLOW: *Mottoes and Commentaries on Froebel's Mother Play*, chapters xiv and xix. (Gives pictures and Froebel's commentaries on training the child's attitudes and habits with animals.)

C. JOHNSON: *When Mother Lets Us Keep Pets.*

Questions and Exercises

1. In what way do you approve or disapprove of Froebel's conceptions of the child's relationship to nature and to animals?

2. How do Froebel's ideas concerning training in sympathy compare with those in the reference in *The Psychology of Childhood?*

3. When a child discovers birds, fish, reptiles, and the like, in close proximity, what are likely to be his first native reactions to each? How far will training and experience modify his behavior?

4. At what age would you initiate children into information regarding the habits and group life of the various animals with which they come in contact?

5. At approximately what ages can children assume part of the care of pets? At what ages can they assume entire responsibility for them?

6. What animals would you include in a list of pets which a child should know in the kindergarten? What part does environment play in determining your selection? What part does use play in your selection?

7. Is it better to have animals out of their place or not at all in school districts where there is no adequate provision for a zoo?

8. Can work in nature study profit by trips to museums? Do you approve of stuffed animals?

9. Of what importance is "playing care for animals" as a preparation for actual responsibility toward them?

10. Cite examples of cruelty springing from the instincts of curiosity and manipulation.

11. Give examples of the type of training in sympathy which is likely to degenerate into sentimentalism.

12. Name ten cases of cruelty to animals and point out how kindliness, sympathy, and helpfulness can be established through awakening interest in the lives of animals and through generating a sense of responsibility toward them.

13. In teaching children to protect animals in their play, what points do you consider could be best emphasized in dramatic play, and what points could be stressed when on hikes and during visits to a zoo?

14. Find in your experience examples of the modification of undesirable native responses toward animals, cruelty, teasing, and bullying.

CHAPTER XII

Miscellaneous Collection of Dramatic Plays

Collateral Reading

A. F. Chamberlain: *The Child*, chapter vi, The Arts of Childhood.

W. H. Kilpatrick: "The Project Method," *Teachers College Record*, Volume XXII, No. 4. (Emphasizes the value of a self-initiated project in education.)

J. and E. Dewey: *Schools of Tomorrow*, pp. 107-124. (Gives illustrations of constructive activities involving the use of the play motive and dramatic situation.)

J. L. Merriam: *Child Life and the Curriculum*, chapter xiv, School Studies — Handwork.

Questions and Exercises

1. After reading the spontaneous dramatic plays recorded in this chapter analyze the original tendencies back of each one. Show how the same tendencies would support work along similar lines — boating, dressmaking, mending shoes, and the like.

2. Select five illustrations of purposive play activities in which you consider interest to be keen enough to act as a driving force and to desired ends. Illustrate how these five play activities could develop into group projects which might involve knowledge and technique in the subjects of the elementary school.

3. Show how building boats, constructing sewing machines, making hats, and the like demand a knowledge of number, form, and color and the application of facts and laws from varied sources.

4. What are the advantages and disadvantages in so-called project teaching? What checks and drills do you consider necessary?

CHAPTER XIII

The Dramatic Plays of One Child

Collateral Reading

R. S. Woodworth: *Psychology, Study of the Mental Life*, chapter xix, Imagination, pp. 481-8.

G. E. JOHNSON: *Education by Plays and Games*, pp. 83-95.

L. E. APPLETON: *A Comparative Study of the Play Activities of Adult Savages and Civilized Children*, pp. 56-61. (Discusses play life for the first four years of childhood.)

C. W. WADDLE: *Introduction to Child Psychology*, pp. 133-138. (Discusses what children play during the first three years of life.)

Questions and Exercises

1. Study the dramatic plays recorded for the second, third, and fourth years respectively. Present the outstanding facts concerning the dramatic plays of each year, bearing in mind the physical and mental welfare of the child.

2. What determines the differences in the early dramatic plays of civilized children and savages?

3. Select five typical plays from among the records and show later stages necessitated by growth in movements and ideas.

4. From a perusal of the records what opinions do you form regarding the part age, sex, and custom play in the choice of experiences to be dramatized?

5. List the plays recorded under the following heads: (1) those depicting animal activities; (2) home activities; (3) trade activities. Show the relation between the interest in each type of play and such original tendencies as manipulation, multiform physical activity, curiosity, motherliness, sociability, and the like.

6. When do constructive activities enter into dramatizations? What is the usual order, from constructive to dramatic or from dramatic to constructive?

7. What do you notice regarding the span of attention during the first, second, third, and fourth years? How do you account for the fact that some of the dramatic plays are very short while others occupy fully an hour?

8. Read the reference on Imagination and then observe a group of children in dramatic games. Give ten samples of so-called fancy and indicate what the child is in reality doing through such mental play.

9. Trace growth in children's uses of objects to represent ideas. Select several examples from the dramatic plays in this chapter and from your own experience.

10. What plays recorded in this chapter seem to you strikingly symbolic in the uses to which objects are put? Is this symbolic play real to the child in the sense in which actual experience is real to you? Contrast the meaning and significance to a child three years of age of a tea-party where everything is imagined and another where exact service is used. Do the same for a child between seven and nine years.

CHAPTER XIV

THE MEANING AND SIGNIFICANCE OF MOVEMENT

Collateral Reading

L. M. TERMAN: *The Hygiene of the School Child*, chapter xvi, The Nervous Child.

F. WARNER: *The Study of Children*, pp. 51-96. (Movements classified and described.)

N. OPPENHEIM: *The Physical Development of the Child*, chapter v. (Discusses the activities of the kindergarten and primary school from the standpoint of physical welfare.)

B. T. BALDWIN: *Physical Growth and School Progress*, Bulletin No. 10, 1914, U. S. Bureau of Education, pp. 144-152. (Presents some general conclusions in regard to the height and weight of school children.)

J. M. TYLER: *Growth and Education*, chapter v, Growth of the Neuro-Muscular System.

Questions and Exercises

1. In your opinion, what factors in the organization of society militate against securing for children a complete physical development in the years before school age? In the primary grades up to the tenth year?

2. What methods and materials can parents use to assist children to build up a good supply of automatic acts, such as running, walking, and reaching?

3. How far do modern investigations of conditions of growth in childhood warrant us to go in subscribing to a rough order of muscular development? Support your argument by facts. What

are the bearings of these facts on the choice of graded games or play apparatus for any selected group of children?

4. Are you willing to follow up experimental evidence that certain muscles have reached the height of their development by planning exercises for the corresponding muscular coördinations which are ripe for action? What physical standards or goals would you set? Illustrate in climbing the rope ladder, in swinging on the traveling rings, and in using the horizontal bars, selecting a definite physical age for the children you plan to help.

5. How far are you willing to go in prescribing certain definite ways of rolling hoops, throwing balls, shooting at targets, and the like? Upon what tests do you base your conclusions regarding the advisability of these set goals? At what stage in each activity would you teach selected movements?

6. Give five illustrations of the best educational procedure to use in planning for running games suitable for children from three to seven years and from seven to nine years of age.

7. Granted that there should be full provision for the spontaneous exercise of all bodily movements before attempting to bring them under voluntary control, what recognition would you make of this fact in a gymnasium period? Would there be separate days for "free choice"? How much group work would you plan, and when?

8. What mistakes have been made in the selection of materials for the kindergarten? For the first, second, third, and fourth grades respectively?

9. Approximately what length of time should a recitation period of the "sit still" kind last in the first, second, and third grades respectively? What subjects in the primary grades admit of workshop teaching, thus eliminating repression of movements? What freedom of posture, position, and movement do large kindergarten floor materials permit as contrasted with materials to be used on tables?

10. Classify as to cause some of the most common nervous movements of children.

11. What school subjects have profited most by scientific investigations concerning the muscles used in fine coördinations? What changes in practice have resulted from these investigations?

12. In regard to improvement in acquiring any new series of movements show the importance of (1) consciousness of a definite goal; (2) speedy working of the law of effect; (3) desire to improve; (4) interest in the process. Support your points by illustrations in teaching dancing, swimming, tennis, and croquet.

13. At what ages are the following statements approximately true?

(a) Children like to roll, slide, climb, pound, jump, and use the entire body in large free movements.

(b) These same activities are engaged in through competition in games or in play with apparatus.

(c) Plays are largely individualistic. Participation by others is not necessary and is sometimes resented.

(d) Objects are desired that stimulate the senses, yet demand little manipulative skill.

(e) Materials providing scope for the imagination, but involving the smaller muscles, have a special appeal.

(f) Play is decreasingly solitary and increasingly competitive, and demands finer manipulation with the hands and feet.

CHAPTER XV

THE VALUE OF GAMES OF SKILL AND PLAY APPARATUS IN MOTOR EDUCATION

Collateral Reading

M. MONTESSORI: *The Montessori Method*, chapter ix. (Discusses special gymnastics for small children and indicates the value of gymnastic apparatus.)

A. C. SIES: "Problems in Sensory-motor Education Involving the Selection of Play Materials and Apparatus for Small Children," *The Kindergarten and First Grade*, Volume I, No. 2. (Describes suitable play apparatus for small children.)

Catalogues of Athletic Supplies.

L. H. GULICK: *A Philosophy of Play*, chapter xii, Play and Physical Growth.

L. H. GULICK: "Psychological, Pedagogical, and Religious Aspects of Group Games," *Pedagogical Seminary*, Volume VI, pp. 135-151.

Questions and Exercises

1. Look over several catalogues of athletic supplies and select six pieces of apparatus which will help children under seven years of age in the achievement of the ordinary physical acts of life such as walking, reaching, and running. Do the same for children from seven to ten years of age.

2. In play on apparatus and in games show how coöperation, rivalry, competition, and repetition are a help to children in working for specific skills.

3. State what practical judgments, foresight of consequences, comparisons, and observations are likely to be made in the following plays and games of skill; ring toss, marbles, rolling hoops, sailing kites, blowing bubbles, climbing, and jumping toward a mark.

4. List ten games of skill involving the exercise of the entire body, which are likely to be invented by children under seven years of age. List ten games of skill for children from seven to nine years of age involving the exercise of specific parts of the body yet demanding coöperation from the entire body.

5. Name ten games or exercises of skill involving the use of the smaller muscles.

6. Plan a series of ball games involving increased skill in throwing or striking toward a mark or in catching balls.

7. Make a list of play material, games, and puzzles to be used in the acquisition of skill.

8. Point out how the development of skill in games invokes experimentation and selection of good copy. Illustrate in the following games or exercises: Cat and Rat, dancing, swimming, performing stunts on apparatus, juggling.

CHAPTER XVI

MOVEMENTS OF GROSS BODILY CONTROL: KICKING, CREEPING, CLIMBING, WALKING, RUNNING, SKIPPING, LEAPING, AND JUMPING

Collateral Reading

L. A. PALMER: *Play Life in the First Eight Years*, pp. 28-40. (A discussion of movement plays in the first eight years.)

Z. McGhee: "A Study in the Play Life of Some South Carolina Children," *Pedagogical Seminary*, Volume VII, pp. 459-478. (Gives a list of games in which running is the dominant interest.)

A. W. Trettien: "Creeping and Walking," *American Journal of Psychology*, Volume XII, p. 31.

E. J. Swift: *Mind in the Making*, chapter vi, The Psychology of Learning.

Questions and Exercises

1. Plan ten games involving running, arranging the games in order of progression from those involving pleasure in simple exercise to those whose aim is acquiring speed, strength, and endurance. Plan ten more games where the chief interest is in strategy, rivalry, and competition between opposing teams. Indicate also how coöperation among members of the team leads to exercise of the social instincts.

2. What set goals or physical coördinations do you consider should be required in connection with running games: (1) for children under seven years; (2) for children under ten years? Support your conclusions by facts concerning the physical development of children.

3. Plan some kicking, creeping, and running plays which a mother would be justified in using with children under three years of age. Support your plan by facts concerning the physical development of children under three years of age.

4. Describe ten games involving jumping. Show the progression from games in which pleasure in simple jumping is the chief element to games involving rivalry, competition, and display.

5. What checks and safeguards in running and jumping would you require from girls between the years nine and twelve?

6. Plan ten pieces of apparatus to be used in a playroom for children under ten years of age, especially designed for the progressive development of creeping, walking, climbing, and jumping activities.

7. Describe ten climbing acts in which the muscles of trunk, legs, and arms coöperate. Contrast the development gained in this way with formal gymnastics planned to exercise the entire body.

8. What periods of accelerated growth in sets of muscles occur in children under twelve years of age? Connect these periods of rapid growth with children's spontaneous plays during these periods.

9. Give several illustrations to show how children arrive at "plateaus" in experimentation on play apparatus. Diagnose the trouble. Show how to proceed in each case.

10. Supply the missing numerals in the following statements:

a. In lung capacity and strength of grip, girls do not measure up to boys at ——— years of age.

b. There is an accelerated increase in growth of bones, especially in the long ones, at ——— years.

c. Children prefer games with definite rules at ——— years.

d. Play in definite groups is preferred; there is a beginning of coöperative team work at ——— years.

e. The aim in performing stunts or games of skill is usually speed and accuracy at ——— years of age.

f. Interest in running is at its height at ——— years.

g. At approximately ——— years of age chasing, doll play and mere imitative games decline, while team games, games of chance, rhythmic exercises, and athletics are more popular.

CHAPTER XVII

Movements of Gross Bodily Control: Swinging, Sliding, and Other Effortless Movement Plays

Collateral Reading

W. W. Newell: *Games and Songs of American Children*, chapter viii. (Discusses games involving pleasures of motion.)

H. S. Curtis: *The Practical Conduct of Play*, chapter v.

Questions and Exercises

1. What is the physiological basis of pleasure in effortless motion as contrasted with pleasure in active exercise?

2. Name ten sports involving pleasure in effortless motion. Name ten plays in which exercise precedes effortless movement.

3. How can current criticism of the use of swings in playgrounds be met by improvement in the various kinds of swinging apparatus and in methods of installing it?

4. Discuss the physiological benefits which children under ten years of age derive from swinging and sliding.

5. Describe some of the harmful effects resulting from the use of several kinds of whirligigs or the commercial merry-go-rounds and from the use of see-saws and swings.

6. Discuss the value of supervision in the use of the slides and swings.

7. How do you account for the large number of wheeled toys on the market? What two-wheeled toys or vehicles would you select for a four-year-old child; for a six- and an eight-year-old child?

8. What ages would you consider best for using the velocipede, the bicycle, roller and ice skates, skis, and snow-shoes?

9. Plan a series of stunts to be performed on the trapeze swings or on the giant stride, demanding progress in ideas and physical coördinations concerned with hanging, swinging, and jumping.

10. Name a series of cautions to be used in connection with play on each piece of apparatus mentioned in this chapter.

11. Illustrate how growth in learning takes place in any series of acts connected with skating, sliding, or riding a bicycle.

CHAPTER XVIII

Movements of Gross Bodily Control: Dancing and Swimming

Collateral Reading

E. Jaques-Dalcroze: *Rhythm, Music and Education*, chapter ix, Rhythm and Creative Imagination.

K. Groos: *Play of Man*, pp. 89-92. (A discussion of dancing.)

E. W. Curtis: *The Dramatic Instinct in Education*, chapter viii, Dancing.

R. St. Johnson: *A History of Dancing*.

Questions and Exercises

1. Show the evolution of the dance in children's spontaneous play. Plan a series of pantomimes or dances likely to be invented

by children under seven years of age. Do the same for children between the ages of seven and nine.

2. Apply the laws of learning to the art of teaching dancing. Indicate your method of developing spontaneous, sincere expression, originality, and grace.

3. Describe the various ways in which music may be used in the teaching of dancing.

4. Plan a series of dances representing: (1) joyful moods of nature; (2) tempestuous moods of nature; (3) joyful work as represented in the trades; (4) the work of toilers; (5) characteristic movements of animals; (6) war. In all of these show progression from simple gestures or pantomimes to highly organized interpretative dances.

5. Describe five common errors you have noticed in the teaching of dancing or of swimming.

6. What set physical goals or coördinations do you consider should be demanded of pupils in dancing and in swimming at seven years? At twelve years? Support your demands by known facts regarding periods of growth and the rough order of muscular development.

7. Criticize favorably and unfavorably several well-known systems of dancing.

8. Indicate the part played by knowledge and feeling in interpretative dancing. Where can you demand uniformity of expression? Where is diversity necessary?

9. In teaching folk dancing is it ever advisable to change the content or form of the dance? Support your answer.

10. What is the place of swimming in the elementary school? In the program of the playground?

CHAPTER XIX

Movements of Gross Bodily Control: Throwing, Rolling, and Spinning Plays

Collateral Reading

R. A. Archer: "Spontaneous Constructions and Primitive Activities of Children Analogous to Those of Primitive Man," *American Journal of Psychology*, Volume XXI, pp. 144-9. (Gives an analysis of throwing.)

A. B. Gomme: *Dictionary of British Folk-Lore*, Volume I, Part I, pp. 13-17. (A collection of ball games.)

W. W. Newell: *Games and Songs of American Children*, chapter xiii. (Describes ball and similar sports.)

Questions and Exercises

1. Plan ten throwing games which will be suited to children under three years. Plan another series of throwing games for children of kindergarten age; another for children from nine to twelve years of age. Support your plan by known facts regarding the throwing propensity during these periods.

2. What requirements or physical coördinations used in throwing do you consider it is necessary to demand at successive periods of development in childhood?

3. Name a number of serious throwing acts used by savages, which have been handed down to children as play activities.

4. Consider the beneficial result upon the circulation, respiration, and digestion of participation in throwing games. Compare with the effects of formal gymnastics.

5. At what age is interest in throwing at its height? When does the tendency wane?

6. Describe the use of judgment and imagination in the acquisition of skill through rolling, spinning, and throwing plays.

7. Criticize a number of throwing games which have been invented for commercial purposes. Support your criticism by known facts concerning muscular development. Invent some better games.

8. Does the fact that throwing is no longer economically necessary in modern society affect the place of throwing activities in childhood education? Support your answer.

9. Plan some spinning plays which afford better muscular coördinations than are built up in the use of small commercial spinning toys.

10. Would you show a child how to throw a ball, hold a bat, or spin a top before or after he has attempted to perform each act?

CHAPTER XX

THE SIGNIFICANCE OF MANIPULATION AS A PLAY ACTIVITY

Collateral Reading

G. C. MEYERS: "Grasping, Reaching and Handling," *American Journal of Psychology*, 1915.

J. LEE: *Play in Education*, chapter xiv, Manipulation; chapter xv, Construction.

A. L. GESELL: *The Normal Child and Primary Education*, chapter xiii, Handiwork.

M. E. WELLS: *A Project Curriculum*, Section I.

E. B. KENT: *The Constructive Interests of Children*. Doctor's dissertation. Columbia University.

Questions and Exercises

1. What is the relation of the instinct of manipulation to courses in practical arts in the first four grades?

2. At what age is there the greatest disparity between expression and technique? Show what allowance you would make for lack of technique in planning the manual activities of the kindergarten. Indicate how you would work for improvement in technique.

3. At what ages do children draw, paint, sew, and mold clay from models? Are there any scientific studies to indicate a path of procedure as regards the use of models at any particular age?

4. Criticize the exclusive use of projects in relation to (1) acquiring technique in an orderly sequence of events; (2) acquiring knowledge through a variety of ways; (3) providing drill in a variety of situations.

5. Name a number of projects which children at any given age might propose and by which they might gain manipulative skill in a variety of ways.

6. Indicate along what lines you would plan different manual activities for girls and boys. Is the difference a matter of application or does it concern the relative native abilities of the sexes?

7. Plan a considerable number of objects which would be suitable for children under three years of age to handle and manipulate. Make a list of play materials for use in the kindergarten; for the first, second, third, and fourth grades respectively.

8. How far would you be willing to trust a child to choose his own line of manual experimentation? What standards and results would you develop in an activity once chosen? Illustrate your point by a project which children in any given grade might select and execute.

9. Show how practical judgments and training in observation, comparison, and the like enter into all manual activities. Illustrate in boat making, in building with blocks, or in stringing beads.

10. From a study of Kent's *The Constructive Interests of Children*, make two lists showing (1) the most common and instinctive manual plays; (2) the most valuable ones for the evolution of society.

11. Fill in the blanks with the appropriate age or sex:

a. ——— are more likely to use carpenter's tools, experiment with levers or pulleys, water power and electricity than are ———.

b. ——— enjoy rhythmic games more than ———.

c. Interest in doll-play is rapidly disappearing at ——— years.

d. ——— like constructive activities connected with cooking, sewing, and dressmaking at ——— years of age.

e. Juggling with the hands and feet is often practiced with enjoyment at ——— years of age.

CHAPTER XXI

Spontaneous Play in the Earth

Collateral Reading

G. S. Hall and Others: "The Story of a Sand Pile," *Aspects of Child Life and Education.*

H. S. Curtis: *The Practical Conduct of Play*, pp. 48-57. (Discusses the appeal of sand, also the construction and care of sand bins.)

E. V. Dobbs: *Primary Handwork*, chapter vi, Sand Tables and What to Do with Them.

J. L. RANDALL: *Educative and Economic Possibilities of School-Directed Home Gardening in Richmond, Indiana*, U. S. Bureau of Education, Bulletin 1917, Nov. 6.

Questions and Exercises

1. After reading the records of spontaneous play in the sand, plan ways and means of utilizing this activity in the first four grades of the elementary school.

2. Show how work in the sand table or in sand bins may be correlated with work in geography, history, art, nature study, arithmetic, literature, and the like.

3. In what ways do manipulation and molding with sand and clay lead to observation and judgment about form and size?

4. What is the chief educational consideration for giving gardening an important place in the school curriculum? What are some of the secondary reasons for its educational significance?

5. Make a list of toys which you consider would not hinder actual experience in handling and molding sand. Name the sand toys which you consider do hinder real development of manipulative abilities.

6. What is the scope and purpose of work in clay (1) from the standpoint of appreciation of form and color; (2) from gaining the ability to externalize feelings and ideas in material form; (3) from training in manipulative skill? Describe some projects which children in any given grade might purpose and execute.

CHAPTER XXII

SPONTANEOUS PLAY WITH FIRE AND WATER

Collateral Reading

C. E. BROWN and G. S. HALL: "Children's Ideas of Fire, Heat, Frost and Cold," *Pedagogical Seminary*, Volume X.

F. E. BOLTON: "Hydro Psychosis," *American Journal of Psychology*, Volume X, pp. 169-227.

H. S. CURTIS: *The Practical Conduct of Play*, chapter vi, Swimming Pools, also chapter iv, pp. 45-48.

Questions and Exercises

1. How would you begin in babyhood to teach children to protect themselves from fire? Where prescribe prohibitions and punishments?

2. Plan an environment for rural children affording abundant opportunity for experimentation with water. Indicate how you have made provision for (1) big muscle activity; (2) experimentation with water as a motor power; (3) knowledge of boats of all kinds; (4) knowledge of water creatures.

3. Plan a wading pool for children under ten years of age and a swimming pool for children of all ages — both suitable for a large city playground in a congested district. Indicate the play materials you would provide for use in the wading pool, also the water sports you would develop in connection with the swimming pool. How would you provide for the sanitation of both wading and swimming pools?

4. Plan an aquarium for children under seven years of age. Do the same for children from seven to twelve years. Indicate how experience with an aquarium may lead to (1) an understanding of the habits and the life history of aquatic creatures; (2) provision for the needs of these creatures in the artificial environment; (3) growth in nurture and responsibility for the lives of aquatic creatures.

5. Show how experimentation with water as a natural force leads to an understanding of the laws of physics and of chemistry. Give illustrations to support the points made.

6. What uses should the school make of the propensity for fire-playing? Indicate an educational program which would lead children to understand the dangers of fire-playing, yet would afford some opportunity for experimentation with fire.

7. How can the school utilize interest in æsthetic appreciation of fire in connection with school celebrations and pageants?

8. After a perusal of the records in this chapter plan a series of commercial water toys which might appeal to the constructive interest of children and train them in ingenuity and inventiveness. Indicate how various kinds of blocks and mechanical constructive sets can be used in inventing machinery connected with water power.

CHAPTER XXIII

VISUAL EXPLORATION

Collateral Reading

K. GROOS: *The Play of Man*, pp. 54-74. (Treats in scholarly way perception of color, form, and movement; should be supplemented by more recent findings in psychology.)

Visual Education, Volumes I and II. (A casual survey of this magazine will indicate modern investigations in connection with visual education.)

J. M. BALDWIN: *Mental Development in the Child and the Race*, chapter iii, Distance and Color Perception by Infants.

D. R. MAJOR: *First Steps in Mental Growth*, chapter vi, Color.

R. PINTNER: "Æsthetic Appreciation of Pictures by Children," *Pedagogical Seminary*, Volume XXV, pp. 216-218.

Questions and Exercises

1. Describe ten vital, engaging experiences which children between seven and nine years of age might plan and execute and which demand appreciation of color, brightness, and form. Plan the same for children under seven years.

2. When is the eye of the child able to perceive colors? Of what does training in appreciation and recognition of color and form consist?

3. How would you proceed to teach colors, bearing in mind the necessity of connecting colors with situations which seem worth while to children and at the same time are typical of the situations in which color will be necessary throughout life?

4. Show how you would subordinate formal work in color and form to situations in which need of both occur.

5. How would you eliminate unnecessary associations of color with objects which it is not important to associate with color in a striking way?

6. Does educational procedure in appreciation of color follow the color schemes used in connection with industry, railroading, and

advertising? How far would you use these color associations in an educational scheme?

7. How far can nature be used as a guide to appreciation of color? Make a list of ways in which children learn colors in connection with gardening, hikes, and excursions.

8. If recognition of form is of great importance, how would you undertake training for an appreciation of form in life situations? Illustrate through projects in which the essentials of form are necessarily perceived and applied.

9. Plan ten projects which reveal the application of the essential characteristics of spheres, cylinders, cubes, and wheels to industrial purposes. Name ten toys illustrating the uses of each.

10. Make a list of twenty-five toys which you consider require special coloring to be serviceable and beautiful to children. Indicate the colors to be used in decorating each.

11. Indicate how recognition and appreciation of color and form may be taught in connection with arithmetic, geography, history, dressmaking, and cookery.

12. Criticize the Montessori method of teaching color and form.

13. Show how colors are learned in connection with target practice, croquet, puzzles, card games, and the like.

14. Indicate how children may learn color and form in playing grocery store, drug store, millinery shop, and candy store.

CHAPTER XXIV

Spontaneous Experimentation with Sound

Collateral Reading

W. S. Pratt: *The History of Music*, chapter i, Primitive or Savage Music.

C. H. Farnsworth: *How to Study Music*, chapter ii, How to Listen to Music.

L. Mohler: *Music Moods a Basis for Appreciation.*

E. B. Tylor: *Anthropology*, chapter iv, Language.

G. W. Woods: *School Orchestras and Bands.*

Questions and Exercises

1. After reading Tylor's *Anthropology*, chapter iv, make some suggestions regarding the training of children in musical appreciation through the use of the human voice, *i. e.*, training involving recognition of low and loud, slow and quick, gentle and violent, and of changes in pitch.

2. How far can spontaneous interest and curiosity in connection with experimentation in sound be carried over into supervised music?

3. Make a list of sound plays a mother could use in developing language with a two-year-old child.

4. How far do current systems of phonics rely upon spontaneous interest in experimentation with sound to motivate drill? Criticize two or three phonic systems.

5. Point out ways in which progressive methods in music apply and utilize children's spontaneous delight in reproducing characteristic sounds and jingles.

6. Name several important experiments in musical appreciation in connection with the use of phonograph records.

7. Describe one or two noted educational experiments with toy orchestras in the elementary school.

8. Study the Mother Goose rhymes and then make out a list of ten or twelve of the most pleasing and characteristic combinations of sounds which you find there. Make a list of the same number of pleasing sounds in nature or in connection with industry. Look through song primers and note how these combinations of sounds are utilized.

9. In the making of crude musical instruments what departments of the elementary school could be called into service?

10. Show how physics, geography, and chemistry may be applied in experimentation with sound.

11. Study children's spontaneous songs and list ten suggestions a writer of songs should bear in mind in connection with subject matter, rhythm, and duration of songs for small children.

APPENDIX B

Bibliography of References concerning Play

Addams, J.: *The Spirit of Youth and the City Streets.* Macmillan. 1909.

American Institute of Child Life. *The Dramatic Instinct in Children.* (Monograph 352.) 1914.

Angell, E. D. *Play.* Little Brown. 1910.

Angell, J. R.: *Chapters from Modern Psychology.* Longmans Green. 1912.
Chapter vi, Social and Racial Psychology, pp. 203-211.

Appleton, L. E.: *A Comparative Study of the Play Activities of Adult Savages and Civilized Children.* Univ. of Chicago Press. 1910.

Archer, R. A.: "Spontaneous Constructions and Primitive Activities of Children Analogous to Those of Primitive Man." *American Journal of Psychology,* XXI, 114-150. 1910.

Babcock, W. H.: "Games of Washington Children." *American Anthropologist,* I, 243-284. 1888.

Bailey, C. S.: *Girls' Make-at-Home Things.* Stokes. 1912.

Baldwin, B. T.: *The Physical Growth of Children from Birth to Maturity.* (Studies in Child Welfare, Volume 1, No. 1.) Univ. of Iowa. 1921.
Pp. 160-164 and 196-197.

Baldwin, J. M.: *Mental Development in the Child and the Race.* Macmillan. 1894.
Chapter iii, Distance and Color Perception by Infants.

Blanton, M. G.: "The Behavior of the Human Infant During the First Thirty Days of Life." *Psychological Review,* XXIV, 456-483. 1917.

Bobbitt, F.: *The Curriculum.* Houghton Mifflin. 1918.
Chapter ii, Educational Experience upon the Play-Level.
Chapter iii, Educational Experience upon the Work-Level.
Chapter xvii, The Function of Play in Human Life.

BOLTON, F. E.: "Hydro Psychoses." *American Journal of Psychology*, X, 169-227. 1899.

BONSER, F. G.: *The Elementary School Curriculum.* Macmillan. 1920.
Chapter v, The Emergence of the Curriculum from Life Activities.

BRAUCHER, H. S.: "Growth and Wealth of the Playground Movement." *American City (City Edition)*, XV, 645. 1916.

BRYAN, W. L.: "On the Development of Voluntary Motor Ability." *American Journal of Psychology*, V, 125-204. 1892.

Bureau of Educational Experiments. *Playthings.* (Bulletin 1.) Bureau of Educational Experiments. 16 W. 8th St., New York. 1917.

BURK, C. F.: "The Collecting Instinct." *Pedagogical Seminary*, VII, 179-207.

BURK, F. L.: "From Fundamental to Accessory in the Development of the Nervous System and of Movements." *Pedagogical Seminary*, VI, 5-64. 1898.

BURK, F. L.: "Teasing and Bullying." *Pedagogical Seminary*, IV, 336-371. 1897.

CABOT, R. C.: *What Men Live By.* Houghton Mifflin. 1914.
Chapter i, Work, Play and Drudgery.
Chapter x, Playfulness, Seriousness and Dullness.
Chapter xi, Play, Recreation and the Other Arts.
Chapter xvi, Chaotic Plays, Disjointed Plays and Others.

CARR, H. A.: *The Survival Values of Play.* (Investigations of the Department of Psychology and Education, Volume 1, No. 2.) Univ. of Colorado. 1902.

CHAMBERLAIN, A. F.: *The Child and Childhood in Folk-thought.* Macmillan. 1903.

CHAMBERLAIN, A. F.: *The Child; a Study in the Evolution of Man.* Scribner. 1900.
Chapter ii, The Meaning of Youth and Play.
Chapter vi, The Arts of Childhood.

CHASE, J. H.: "Street Games of New York Children," *Pedagogical Seminary*, 12, 503-4.

CHASSEL, C. F., and UPTON, M. S.: "Scales for Measuring Habits of Good Citizenship." *Teachers College Record*, XXIII, 52-80.

CHUBB, P. (and ASSOCIATES): *Festivals and Plays in Schools and Elsewhere.* Harper. 1912.

COLVIN, S. S.: *The Learning Process.* Macmillan. 1911.
Chapter i, Fundamental Elements in the Learning Process.

COLVIN, S. S., and BAGLEY, W. C.: *Human Behavior.* Macmillan. 1913.
Chapter x, How Instinctive Human Behavior May be Changed.

COMSTOCK, A. B.: *The Pet Book.* Second Edition. Comstock Pub. Co. 1915.

COOK, H. C.: *The Play Way: An Essay in Educational Method.* Stokes. 1915.
Chapter i, General Principles of the Play Way.
Chapter ii, General Methods of the Play Way.

CORBIN, A. M.: *The School of Childhood of the University of Pittsburgh.* (Bulletin, Volume 10, No. 8.) Univ. of Pittsburgh. 1914.

CRAWFORD, C., and FOGG, E. R.: *The Rhythms of Childhood.* Barnes. 1915.

CROMIE, W. J.: "Eight Minutes' Common-Sense Play for the Growing Child." *Outlook*, CVIII, 188-195. 1914.

CROSWELL, T. R.: "Amusements of Worcester School Children." *Pedagogical Seminary*, VI, 314-371. 1899.

CULIN, S.: "Hawaiian Games." *American Anthropologist, New Series*, I, 201-247. 1899.

CULIN, S.: "Street Games of Boys in Brooklyn, New York." *Journal of American Folk-Lore*, IV, 221-237. 1891.

CURTIS, E. W.: *The Dramatic Instinct in Education.* Houghton Mifflin. 1914.
Chapter vi, Play.
Chapter vii, Dancing.
Chapter xi, Pageantry.

CURTIS, H. S.: *Education through Play.* Macmillan. 1915.

CURTIS, H. S.: *The Play Movement and its Significance.* Macmillan. 1917.

CURTIS, H. S.: *The Practical Conduct of Play.* Macmillan. 1915.

DEARBORN, G. V. N.: *The Influence of Joy.* Little Brown. 1916.

DEARBORN, G. V. N.: *Motor-sensory Development.* Warwick and York. 1910.

DEWEY, J.: *How We Think.* Heath. 1910.
Chapter xii, Activity and the Training of Thought.

DEWEY, J.: *Interest and Effort in Education.* Houghton Mifflin. 1913.
Chapter iv, Types of Educative Interests.

DEWEY, J.: "Interpretations of Savage Mind." *Psychological Review*, IX, 217-230. 1902.

DEWEY, J.: "Play." "Play and Education." *The Cyclopedia of Education.* Macmillan. 1913.

DEWEY, J. and DEWEY, E.: *Schools of Tomorrow.* Dutton. 1915.

DOBBS, E. V.: *Primary Handwork.* Macmillan. 1914.
Chapter v, The House Problem.
Chapter vii, Sand Tables and What to Do with Them.
Chapter viii, Animals and Toys.

DORRETT, O. W.: *Music and the Play Instinct.* World Book Co. 1915.

ELLWOOD, C. A.: *Sociology in its Psychological Aspects.* Appleton. 1912.
Chapter ix, The Rôle of Instinct in the Social Life.

EVANS, E.: *The Problem of the Nervous Child.* Dodd Mead. 1920.

FELTON, R. A.: *Serving the Neighborhood.* Missionary Education Movement. 156 Fifth Ave., New York. 1920.

FLEXNER, A.: *A Modern School.* (Occasional Papers, No. 3.) General Education Board. 1916.

FOLSON, J. K.: "The Scientific Play World of a Child." *Pedagogical Seminary*, XXII, 161-182. 1915.

FORBUSH, W. B.: *The Boy Problem.* Pilgrim Press. 1901.

FORBUSH, W. B.: *Child Study and Child Training.* Scribner. 1915.

FORBUSH, W. B.: *Manual of Play.* George W. Jacobs & Co. 1914.

FREEMAN, F. N.: *How Children Learn.* Houghton Mifflin. 1917.
Chapter iv, The Child's Native Responses: Play.

FROEBEL, F.: *The Education of Man.* Appleton. 1887.

GARDNER, F.: "Some Games of Philippine Children." *Journal of American Folk-Lore*, XX, 119-120. 1907.

GESELL, A. L. and GESELL, B. C.: *The Normal Child and Primary Education.* Ginn. 1912.
Chapter viii, Touch and the Appreciation of Things.

Chapter x, Dramatic Expression.
Chapter xii, Language.
Chapter xiii, Handwork.

GILLIN, J. L.: "The Sociology of Recreation." *American Journal of Sociology*, XIX, 825-834. 1914.

GOMME, A. B.: *Dictionary of British Folk-Lore.* Nutt. 1894. Part 1, The Traditional Games of England, Scotland and Ireland. 2 volumes.

GROOS, K.: *The Play of Man.* Appleton. 1901.

GROSZMANN, M. P. E.: *The Exceptional Child.* Scribner. 1917. Chapter xxii, The Kindergarten Period.

GULICK, L. H.: *The Healthful Art of Dancing.* Doubleday Page. 1910.

GULICK, L. H.: *A Philosophy of Play.* Scribner. 1920.
Chapter iii, Hunting and Fighting.
Chapter v, Fire Play.
Chapter xii, Play and Physical Growth.

GULICK, L. H.: "Psychological, Pedagogical and Religious Aspects of Group Games." *Pedagogical Seminary*, VI, 135-151. 1899.

HALL, G. S. and OTHERS: *Aspects of Child Life and Education.* Ginn. 1907.
Hall, The Story of a Sand Pile, pp. 142-156.
Hall & Ellis, A Study of Dolls, pp. 157-204.
Burk, The Collecting Instinct, pp. 205-240.
Ellis, Fetichism in Children, pp. 287-299.

HALL, G. S. and BROWNE, C. E.: "Children's Ideas of Fire, Heat, Frost, and Cold." *Pedagogical Seminary*, X, 27-85. 1903.

HALL, G. S.: *Youth, Its Education, Regimen and Hygiene.* Appleton. 1904.
Chapter vi, Play, Sports and Games.

HANCOCK, J. A.: "A Preliminary Study of Motor Ability," *Pedagogical Seminary*, III, 8-29. 1894.

HANCOCK, J. A.: "Work and Play." *Education*, XXV, 257-268. 1905.

HETHERINGTON, C. W.: *The Demonstration Play School of 1913.* (Publications: *Education*, V, 241-288.) Univ. of California. 1914. (Same article, *American Physical Education Review*, XX, 282-94; 373-80; 429-45. 1915.)

HERTS, A. M.: *The Children's Educational Theatre.* Harper. 1911.

HERTS, A. M.: "Dramatic Instinct, Its Use and Misuse." *Pedagogical Seminary*, XV, 550-562. 1908.

HILL, P. S., Editor: *Experimental Studies in Kindergarten Theory and Practice.* Teachers College, Columbia Univ. 1914.

HUNT, J. L.: *A Catalogue of Play Equipment for Little Children.* (Bulletin 8.) Bureau of Educational Experiments. 16 West 8th Street, New York. 1918.

JAQUES-DALCROZE. E.: *Rhythm, Music and Education.* Putnam. 1921.
Chapter v, Music and the Child.
Chapter ix, Rhythm and Creative Imagination.
Chapter x, Rhythm and Gesture in Music Drama and Criticism.

JENNINGS, H. S., WATSON, J. B., MEYER, A., THOMAS, W. I.: *Suggestions of Modern Science Concerning Education.* Macmillan. 1917.
Pp. 6-17, Heredity and Diversity in Children.

JOHNSON, B. J.: *Experimental Study of Motor Abilities of Children in Primary Grades.* (Johns Hopkins Univ. Studies in Education, No. 2.) Johns Hopkins Press. 1917.

JOHNSON, C.: *When Mother Lets Us Keep Pets.* Moffatt. 1911.

JOHNSON, G. E. *Education by Plays and Games.* Ginn. 1907.

JOHNSON, G. E. *Education Through Recreation.* (Cleveland Education Survey.) The Survey Committee of the Cleveland Foundation. 1916.

JOHNSON, G. E.: "Play as a Moral Equivalent of War." *The Playground*, VI, 111-123. 1912. (Same article, *American Physical Education Review*, XVI, 291-301. 1911.)

JOHNSON, V. E.: *Chemistry and Chemical Magic.* Oxford Univ. Press. 1912.

JOHNSON, V. E.: *Flying and Some of its Mysteries.* Oxford Univ. Press. 1912.

JUDD, C. H.: *Psychology.* Second Edition. Ginn. 1917.
Chapter vi, Experience and Behavior.
Chapter x, Speech as a Form of Behavior.

KENDALL, C. N. and MIRICK, G. A.: *How to Teach the Special Subjects*. Houghton Mifflin. 1918.
Chapter iii, Physical Education and Play.

KENT, E. B.: *The Constructive Interests of Children*. (Thesis, Ph. D.) Teachers College, Columbia Univ. 1903.

KEY, E.: *The Century of the Child*. Putnam. 1909.

KIDD, D.: *Savage Childhood. A Study of Kafir Children*. Black. 1906.
Chapter v, Play.

KILPATRICK, W. H.: *The Project Method*. Teachers College, Columbia Univ. 1918.

KING, I.: *Education for Social Efficiency*. Appleton. 1913.
Chapter vii, Play as a Factor in Social Efficiency.

KING, I.: *The Psychology of Child Development*. Univ. of Chicago Press. 1903.

KIRKPATRICK, E. A.: *Fundamentals of Child Study*. New Edition. Macmillan. 1917.
Chapter ix, Development of Adaptive Instincts — Play.

KIRKPATRICK, E. A.: *The Individual in the Making*. Houghton Mifflin. 1911.
Chapter ii, Interest.
Chapter v, Imitating and Socializing Stage.

KLINE, L. W. and FRANCE, C. J.: "The Psychology of Ownership." *Pedagogical Seminary*, VI, 421-470. 1899.

KRACKOWIZER, A. M.: *Projects in the Primary Grades*. Lippincott. 1919.

LANGENBECK, M.: "A Study of a Five-year-old Child." *Pedagogical Seminary*, XXII, 65-88. 1915.

LEE, J.: "Play as an Antidote to Civilization." *The Playground*, V, 110-126. 1911.

LEE, J.: "Play as Medicine." *The Playground*, V, 289-302. 1911.

LEE, J.: *Play in Education*. Macmillan. 1915.

MCDOUGALL, W.: *An Introduction to Social Psychology*. Thirteenth Edition. Luce. 1918.
Chapter xi, The Instinct of Pugnacity.
Chapter xii, The Gregarious Instinct.
Chapter xv, Imitation, Play and Habit.

McKeever, W. A.: *Training the Boy.* Macmillan. 1913.
Chapter vii, Play and Playthings.

McGhee, Z.: "A Study in the Play Life of Some South Carolina Children." *Pedagogical Seminary*, VII, 459-478. 1900.

McGough, F. J.: "Problems of Supervision of a Playground." *The Playground*, IX, 127-133. 1915.

McGough, F. J.: "The Sand Pile — Its Use and Care." *The Playground*, IX, 160-164. 1915.

McMurry, C. A.: *Teaching by Projects.* Macmillan. 1920.

MacPherson, S.: *The Musical Education of the Child.* Boston Music Co. 1916.

Major, D. R.: *First Steps in Mental Growth.* Macmillan. 1906.
Chapter vi, Color.
Chapter xii, Play.

Mangold, G. B.: *Child Problems.* Macmillan. 1910.
Book 2, Chapter i, Play.
Book 2, Chapter ii, The Playground Movement.

Mangold, G. B.: *Problems of Child Welfare.* Macmillan. 1914.
Part 2, Chapter iv, Play and Recreation.

Marot, H.: *Creative Impulse in Industry.* Dutton. 1918.

Mateer, F.: *Child Behavior; a Critical and Experimental Study of Young Children by the Method of Conditional Reflexes.* Badger. 1918.

Meriam, J. L.: *Child Life and the Curriculum.* World Book Co. 1920.
Chapter xiv, School Studies — Play.
Chapter xvi, School Studies — Handwork.

Miller, I. L.: *The Psychology of Thinking.* Macmillan. 1909.
Chapter xiv, Development of the Imagination in Relation to Thinking.

Moll, A.: *The Sexual Life of the Child.* Macmillan. 1912.

Montessori, M.: *The Montessori Method.* Sixth Edition. Stokes. 1912.

Montessori, M.: *Spontaneous Activity in Education.* (The Advanced Montessori Method, Volume 1.) Stokes, 1917.

Myers, G. C.: "Grasping, Reaching and Handling." *American Journal of Psychology*, XXVI, 525-539. 1915.

NEWELL, W. W.: *Games and Songs of American Children.* Harper. 1884.

NORSWORTHY, N. and WHITLEY, M. T.: *The Psychology of Childhood.* Macmillan. 1918.

OBERNDORF, C. P.: "The Emotional Life of the Child." *Archives of Pediatrics*, XXXIV, 747. 1917.

OPPENHEIM, N.: *The Development of the Child.* Macmillan. 1898.
Chapters ii and iii, Facts in the Comparative Development of the Child.

O'SHEA, M. V.: *Social Development and Education.* Houghton Mifflin. 1909.
Chapter ix, Social Types.
Chapter xiii, Coöperation in Group Education.

PALMER, L. A.: *Play Life in the First Eight Years.* Ginn. 1916.

PATRICK, G. T. W.: *Psychology of Relaxation.* Houghton Mifflin. 1916.
Chapter ii, The Psychology of Play.

PINTNER, R.: "Æsthetic Appreciation of Pictures by Children." *Pedagogical Seminary*, XXV, 216-218. 1918.

PRAY, F.: "Children's Dramatic Games, Ancient and Modern." *Education*, XXV, 356-365. 1905.

PUFFER, J. A.: *The Boy and His Gang.* Houghton Mifflin. 1912.
Chapter x, The Individualistic Activities and the Group Games.
Chapter xiii, The Gang and the School.

PYLE, W. H.: *The Psychology of Learning.* Warwick and York. 1921.
Chapter xiii, Inborn Nature in Relation to Learning.

RANDALL, J. L.: *Educative and Economic Possibilities of School-Directed Home Gardening in Richmond, Indiana.* (U. S. Bureau of Education Bulletin 1917, No. 6.)

RAPEER, L. W., Editor: *Educational Hygiene.* Scribner. 1915.
Chapter xxi, Play and Playgrounds in Cities, G. E. Johnson.
Chapter xxiv, Play and Recreation at the Rural School, S. H. Curtis.

REEDER, R. R.: *How Two Hundred Children Live and Learn.* Charities Publication Committee. 1910.

RIIS, J.: *The Children of the Poor.* Scribner. 1892.
Chapter xvii, The Truants of Our Streets.

RUSK, R. R.: *Introduction to Experimental Education.* Longmans Green. 1913.
Chapter iii, The General Development of the Child — Physical and Mental.

SEASHORE, C. E.: *Psychology in Daily Life.* Appleton. 1913.
Chapter i, Play.

SHEDLOCK, M.: "Dramatic Instinct in the Social Life of the Child." *Social Education Quarterly*, I, 61-65. January, 1908.

SHELDON, H. D.: "The Institutional Activities of American Children." *American Journal of Psychology*, IX, 425-48. 1898.

SHINN, M. W.: *The Biography of a Baby.* Houghton Mifflin. 1900.

SIES, A. C.: "Problems in Sensory-motor Education Involving the Selection of Play Materials and Apparatus for Small Children." *Kindergarten and First Grade*, I, 49-55. 1916.

SISSON, G.: "Children's Plays." *Studies in Education, edited by Earl Barnes.* First Series, I, Stanford Univ. 1896-97.

SLAUGHTER, J. W.: "The Moon in Childhood and Folklore." *American Journal of Psychology*, XIII, 294-318. 1902.

STRAYER, G. D. and NORSWORTHY, N.: *How to Teach.* Macmillan. 1917.
Chapter ix, Meaning of Play in Education.

ST. JOHNSTON, R.: *A History of Dancing.* Simpkin. 1906.

STEVENSON, R. L.: "Child's Play." In *Virginibus Puerisque.* Scribner.

STRUTT, J.: *The Sports and Pastimes of the People of England.* Chatto & Windus. 1876.

SWIFT, E. J.: *Mind in the Making.* Scribner. 1908.
Chapter ii, Criminal Tendencies of Boys; Their Cause and Function.
Chapter vi, The Psychology of Learning.

SWIFT, E. J.: *Youth and the Race.* Scribner. 1912.
Chapter iii, The Chance to Grow.
Chapter vii, The Spirit of the Gang: an Educational Asset.

TANNER, A. E.: *The Child.* Rand McNally. 1904.

TERMAN, L. M.: *The Hygiene of the School Child.* Houghton Mifflin. 1914.

Chapter v, Some Physiological Differences Between Children and Adults.
Chapter xvi, The Nervous Child.

THOMAS, W. I.: "The Gaming Instinct," *American Journal of Sociology*, VI, 750-63.

THORNDIKE, E. L.: *Educational Psychology*. 3 volumes. Teachers College, Columbia Univ. 1913-14.

THORNDIKE, E. L.: *Notes on Child Study*. Second Edition. (Columbia University Contributions to Philosophy, Psychology & Education, Volume 8, Nos. 3-4.) Macmillan. 1903.
Chapter xiv, The Emotional Life of Children.
Chapter xv, The Active Side of Child Life.
Chapter xvi, Moral Education and Discipline.
Chapter xxi, Differences between Boys and Girls in Mental Traits.

TOWN, C. H.: *An Analytic Study of a Group of Five and Six-year-old Children*. (Studies in Child Welfare, Volume 1, No. 4.) Univ. of Iowa. 1921.

TRETTIEN, A. W.: "Creeping and Walking." *American Journal of Psychology*, XII, 1-57. 1900.

TYLER, J. M.: *Growth and Education*. Houghton Mifflin. 1907.
Chapter v, Growth of the Neuro-Muscular System.
Chapter x, The Kindergarten Period.
Chapter xi, The Child Entering School.
Chapter xiv, Physical Training — Place of Play in Education.

TYLOR, E. B.: *Anthropology*. Macmillan. 1881.
Chapters iv and v, Language (Including Primitive Sounds.)

WADDLE, C. W.: *An Introduction to Child Psychology*. Houghton Mifflin. 1918.
Chapter vi, The Play of Children.

WALKER, J. R.: "Sioux Games." *Journal of American Folk-Lore*, XVIII, 277-290. 1905.

WARNER, F.: *The Study of Children*. Macmillan. 1897.
Chapter ii, The Body of the Child: Its Construction and Growth.

WATSON, J. B.: *Psychology from the Standpoint of a Behaviorist*. Lippincott. 1919.
Chapter vi, Hereditary Modes of Response: Emotions.
Chapter vii, Hereditary Modes of Response: Instincts.

WELLS, M. E.: *A Project Curriculum.* Lippincott. 1921.
Section 1, The Curriculum as Worked Out in Trenton, N. J.

WHITE, W. A.: *The Mental Hygiene of Childhood.* Little Brown. 1919.
Chapter iv, Stages of Development.
Chapter viii, Further Problems — Play.

WOOD, W.: *Children's Play and its Place in Education.* Kegan Paul. 1913.

WOODROW, H.: *Brightness and Dullness in Children.* Lippincott. 1919.
Chapter iii, Brightness and Dullness.

WOODWORTH, R. S.: *Psychology, a Study of Mental Life.* Holt. 1921.
Chapter xix, Imagination, pp. 481-488.

INDEX

APPENDIX B

Bibliography of References concerning Play

Addams, J.: *The Spirit of Youth and the City Streets.* Macmillan. 1909.

American Institute of Child Life. *The Dramatic Instinct in Children.* (Monograph 352.) 1914.

Angell, E. D. *Play.* Little Brown. 1910.

Angell, J. R.: *Chapters from Modern Psychology.* Longmans Green. 1912.
Chapter vi, Social and Racial Psychology, pp. 203-211.

Appleton, L. E.: *A Comparative Study of the Play Activities of Adult Savages and Civilized Children.* Univ. of Chicago Press. 1910.

Archer, R. A.: "Spontaneous Constructions and Primitive Activities of Children Analogous to Those of Primitive Man" *American Journal of Psychology,* XXI, 114-150. 1910.

Babcock, W. H.: "Games of Washington Children." *American Anthropologist,* I, 243-284. 1888.

Bailey, C. S.: *Girls' Make-at-Home Things.* Stokes. 1912.

Baldwin, B. T.: *The Physical Growth of Children from Birth to Maturity.* (Studies in Child Welfare, Volume 1, No. 1.) Univ. of Iowa. 1921.
Pp. 160-164 and 196-197.

Baldwin, J. M.: *Mental Development in the Child and the Race.* Macmillan. 1894.
Chapter iii, Distance and Color Perception by Infants.

Blanton, M. G.: "The Behavior of the Human Infant During the First Thirty Days of Life." *Psychological Review,* XXIV, 456-483. 1917.

Bobbitt, F.: *The Curriculum.* Houghton Mifflin. 1918.
Chapter ii, Educational Experience upon the Play-Level.
Chapter iii, Educational Experience upon the Work-Level.
Chapter xvii, The Function of Play in Human Life.

APPENDIX B

Bibliography of References concerning Play

Addams, J.: *The Spirit of Youth and the City Streets.* Macmillan. 1909.

American Institute of Child Life. *The Dramatic Instinct in Children.* (Monograph 352.) 1914.

Angell, E. D. *Play.* Little Brown. 1910.

Angell, J. R.: *Chapters from Modern Psychology.* Longmans Green. 1912.
Chapter vi, Social and Racial Psychology, pp. 203-211.

Appleton, L. E.: *A Comparative Study of the Play Activities of Adult Savages and Civilized Children.* Univ. of Chicago Press. 1910.

Archer, R. A.: "Spontaneous Constructions and Primitive Activities of Children Analogous to Those of Primitive Man" *American Journal of Psychology,* XXI, 114-150. 1910.

Babcock, W. H.: "Games of Washington Children." *American Anthropologist,* I, 243-284. 1888.

Bailey, C. S.: *Girls' Make-at-Home Things.* Stokes. 1912.

Baldwin, B. T.: *The Physical Growth of Children from Birth to Maturity.* (Studies in Child Welfare, Volume 1, No. 1.) Univ. of Iowa. 1921.
Pp. 160-164 and 196-197.

Baldwin, J. M.: *Mental Development in the Child and the Race.* Macmillan. 1894.
Chapter iii, Distance and Color Perception by Infants.

Blanton, M. G.: "The Behavior of the Human Infant During the First Thirty Days of Life." *Psychological Review,* XXIV, 456-483. 1917.

Bobbitt, F.: *The Curriculum.* Houghton Mifflin. 1918.
Chapter ii, Educational Experience upon the Play-Level.
Chapter iii, Educational Experience upon the Work-Level.
Chapter xvii, The Function of Play in Human Life.

APPENDIX B

Bibliography of References concerning Play

Addams, J.: *The Spirit of Youth and the City Streets.* Macmillan. 1909.

American Institute of Child Life. *The Dramatic Instinct in Children.* (Monograph 352.) 1914.

Angell, E. D. *Play.* Little Brown. 1910.

Angell, J. R.: *Chapters from Modern Psychology.* Longmans Green. 1912.
Chapter vi, Social and Racial Psychology, pp. 203-211.

Appleton, L. E.: *A Comparative Study of the Play Activities of Adult Savages and Civilized Children.* Univ. of Chicago Press. 1910.

Archer, R. A.: "Spontaneous Constructions and Primitive Activities of Children Analogous to Those of Primitive Man" *American Journal of Psychology,* XXI, 114-150. 1910.

Babcock, W. H.: "Games of Washington Children." *American Anthropologist,* I, 243-284. 1888.

Bailey, C. S.: *Girls' Make-at-Home Things.* Stokes. 1912.

Baldwin, B. T.: *The Physical Growth of Children from Birth to Maturity.* (Studies in Child Welfare, Volume 1, No. 1.) Univ. of Iowa. 1921.
Pp. 160-164 and 196-197.

Baldwin, J. M.: *Mental Development in the Child and the Race.* Macmillan. 1894.
Chapter iii, Distance and Color Perception by Infants.

Blanton, M. G.: "The Behavior of the Human Infant During the First Thirty Days of Life." *Psychological Review,* XXIV, 456-483. 1917.

Bobbitt, F.: *The Curriculum.* Houghton Mifflin. 1918.
Chapter ii, Educational Experience upon the Play-Level.
Chapter iii, Educational Experience upon the Work-Level.
Chapter xvii, The Function of Play in Human Life.

BOLTON, F. E.: "Hydro Psychoses." *American Journal of Psychology*, X, 169-227. 1899.

BONSER, F. G.: *The Elementary School Curriculum.* Macmillan. 1920.
Chapter v, The Emergence of the Curriculum from Life Activities.

BRAUCHER, H. S.: "Growth and Wealth of the Playground Movement." *American City* (*City Edition*), XV, 645. 1916.

BRYAN, W. L.: "On the Development of Voluntary Motor Ability." *American Journal of Psychology*, V, 125-204. 1892.

Bureau of Educational Experiments. *Playthings.* (Bulletin 1.) Bureau of Educational Experiments. 16 W. 8th St., New York. 1917.

BURK, C. F.: "The Collecting Instinct." *Pedagogical Seminary*, VII, 179-207.

BURK, F. L.: "From Fundamental to Accessory in the Development of the Nervous System and of Movements." *Pedagogical Seminary*, VI, 5-64. 1898.

BURK, F. L.: "Teasing and Bullying." *Pedagogical Seminary*, IV, 336-371. 1897.

CABOT, R. C.: *What Men Live By.* Houghton Mifflin. 1914.
Chapter i, Work, Play and Drudgery.
Chapter x, Playfulness, Seriousness and Dullness.
Chapter xi, Play, Recreation and the Other Arts.
Chapter xvi, Chaotic Plays, Disjointed Plays and Others.

CARR, H. A.: *The Survival Values of Play.* (Investigations of the Department of Psychology and Education, Volume 1, No. 2.) Univ. of Colorado. 1902.

CHAMBERLAIN, A. F.: *The Child and Childhood in Folk-thought.* Macmillan. 1903.

CHAMBERLAIN, A. F.: *The Child; a Study in the Evolution of Man.* Scribner. 1900.
Chapter ii, The Meaning of Youth and Play.
Chapter vi, The Arts of Childhood.

CHASE, J. H.: "Street Games of New York Children," *Pedagogical Seminary*, 12, 503-4.

CHASSEL, C. F., and UPTON, M. S.: "Scales for Measuring Habits of Good Citizenship." *Teachers College Record*, XXIII, 52-80.